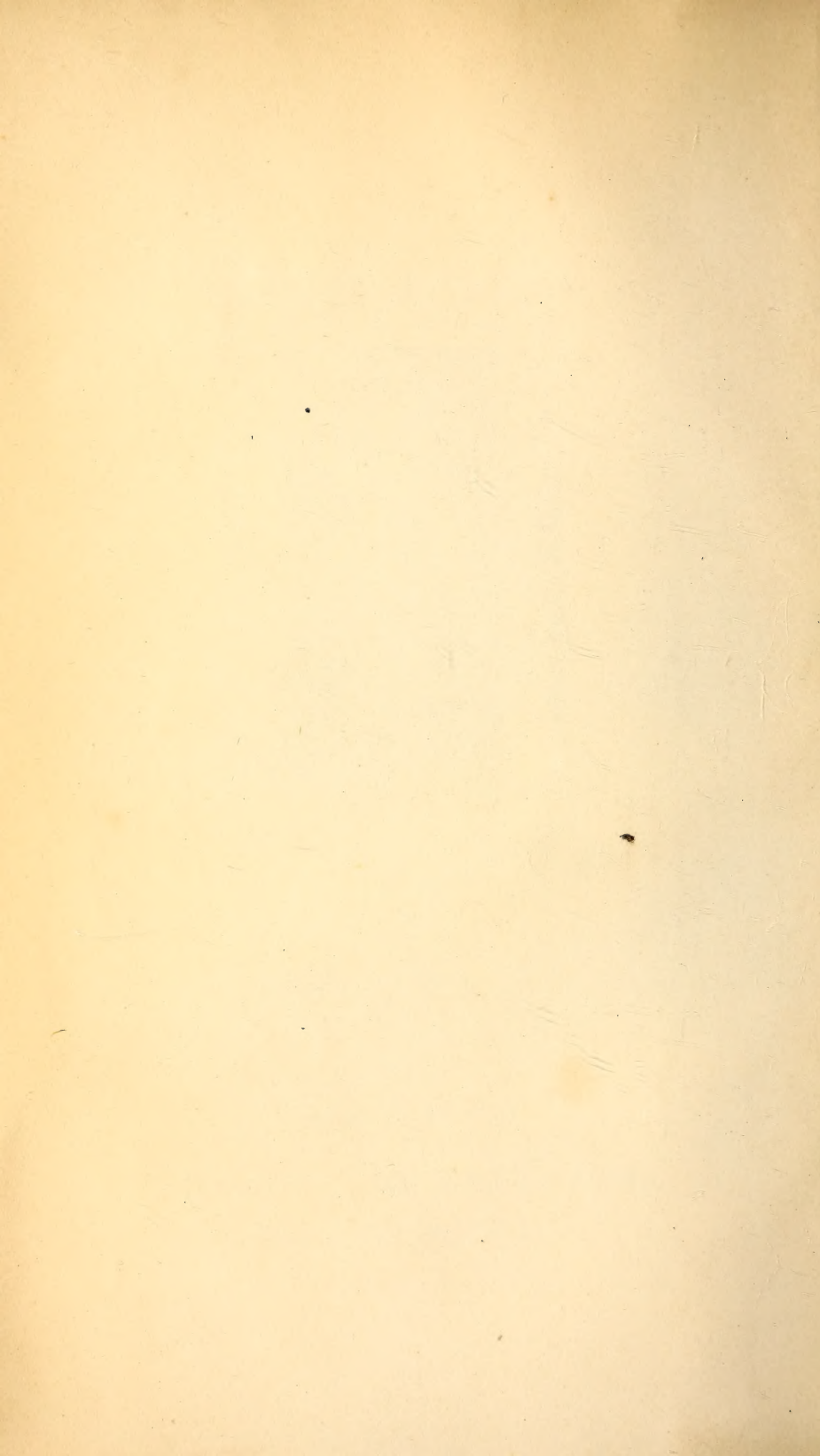




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EDITED BY ISAAC HAYS, M.D.

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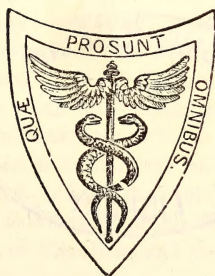
EDITED BY

ISAAC HAYS, M.D.,

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ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA,
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TO READERS AND CORRESPONDENTS.

We have on hand a number of communications which shall receive early attention.

Correspondents who desire their papers to appear as *original articles* in this Journal should send them to us *exclusively*. We must repeat, what we have said on a former occasion, that the simultaneous communication of the same article to several journals, savours of the spirit of advertising, and gives rise to the suspicion that the aim of the author is rather to spread his own fame, than to advance our science.

It is not consistent with the plan of this Journal to publish anonymous communications.

The following works have been received :

Traité Théorique et Pratique des Luxations congenitales du Fémur, suivi d'un appendice sur la prophylaxie des luxations spontanées. Par le Docteur Ch. G. Pravaz, M. D. P., Directeur de l'Institut orthopédique et pneumatique de Lyon. Lyon and Paris, 1847. (From the Author.)

A Treatise on the Practice of Medicine. By GEO. B. WOOD, M. D., Prof. Mat. Med. and Pharm. in the University of Penna. Vol. II. Philada., Grigg, Elliot, & Co., 1847. (From the Author.)

Observations on Aneurism, and its Treatment by Compression. By O'BRYEN BELLINGHAM, M. D., Edin. London, 1847. (From the Author.)

Medical Botany : or Descriptions of the more important Plants used in Medicine, with their History, Properties, and Mode of Administration. By R. EGLESFIELD GRIFFITH, M. D., Member of the American Philos. Soc. Acad. Nat. Sci., &c., with upwards of 300 illustrations. Philada., Lea & Blanchard, 1847. (From the Publishers.)

Illustrations of Medical Botany : consisting of coloured figures of the plants, affording the more important articles of the Materia Medica; and descriptive letter press. By JOSEPH CARSON, M. D., Prof. Mat. Med. in Phil. Coll. Pharm., &c. &c. &c. The drawings on stone by J. H. COLEN. Vol. I. Philada., LLOYD P. SMITH, 1847. (From the Publishers.)

Summary of the Transactions of the College of Physicians of Philadelphia. Dec. 1846 to April 1847 inclusive. (From the College.)

Proceedings of the Annual Convention of the Connecticut Medical Society, May 1847, together with a list of Members, and the annual address. Hartford 1847. (From Dr. Russell.)

Outlines of the Veins and Lymphatics : with short Descriptions. Designed for the use of Medical Students. By JOHN NEILL, M. D., Demonstrator of Anatomy in the University of Penna., &c. &c. &c. Philada., Ed. Barrington and Geo. D. Haswell, 1847. (From the Author.)

The Medical Student's Vade Mecum, or Medical Examinations upon Anatomy—Physiology—Chemistry—Materia Medica—Surgery—Obstetrics—Practice of Medicine (including Physical Diagnosis and Diseases of the Skin), and Poisons.

Second edition, revised and greatly enlarged. By GEORGE MENDENHALL, M. D., Lect. on Pathology at Medical Institute of Cincinnati. Philada., Lindsay & Blakiston, 1847. (From the Publishers.)

The Virginia Springs, with their Analysis; and some remarks on their character, together with a directory for the use of the white sulphur water, and an account of the diseases to which it is applicable: to which is added a review of a portion of WM. BURKE's book on the Mineral Springs of Western Virginia, &c., and an account of the different routes to the springs. By JOHN J. MOORMAN, M. D. Philada., Lindsay & Blakiston, 1847. (From the Author.)

Annual Report of the City Register of the deaths in the city of Charleston, S. C. By J. L. DAWSON, M. D. (From the Author.)

Thirtieth Annual Report of the state of the Asylum, for the relief of persons deprived of the use of their reason. (From Dr. Evans.)

Some account of the first use of Sulphuric Ether by inhalation in surgical practice. By GEORGE HAYWARD, M. D. (From the Author.)

The Twenty-third annual Report of the officers of the Retreat for the Insane at Hartford, Conn. April, 1847. (From Dr. Butler.)

Reports of the Pennsylvania Hospital for the Insane, with a sketch of its history, building and organization. By THOMAS S. KIRKBRIDE, M. D., Physician to the Institution. Published by order of the Board of Managers. Philada., 1846. (From Dr. Kirkbride.)

Fifth Annual Report to the Legislature, relative to the Registry and returns of Births, Marriages, and Deaths in Massachusetts. For the year ending April 30th, 1846. By JOHN G. PALFREY, Secretary of the Commonwealth. Boston, 1846. (From Dr. Edward Jarvis.)

An Address, to the Class of Graduates of the College of Physicians and Surgeons of the University of New York, delivered at the commencement, March 11th, 1847. By ALEX. H. STEVENS, M. D., President and Emeritus Prof. of Surgery. New York, 1847. (From the Author.)

Two Addresses delivered before the New York State Medical Society, in the Assembly Chamber of the Capitol, at the city of Albany, Feb. 2d, 1847. By JOHN MCCALL, M. D., President of the Society. Albany, 1847. (From the Author.)

Valedictory Address to the Graduates of the Medical Department of Pennsylvania College, session of 1846-47. By WASHINGTON L. ATLEE, M. D., Prof. Chemistry. Published by request of the Graduates. Philada., 1847. (From the Author.)

Address to the Graduating Class of the Indiana Medical College, at the public commencement, Feb. 18th, 1847. By M. L. KNAPP, M. D., Prof. Mat. Med., &c. &c. Chicago, 1847.

A Dictionary of Modern Gardening. By GEO. WM. JOHNSON, Esq., with one hundred and eighty wood cuts. Edited with numerous additions by DAVID LANDRETH of Philada. Philada., Lea & Blanchard, 1847. (From the Publishers.)

The following Journals have been received in exchange:

The Medico-Chirurgical Review. April, 1847.

The Edinburgh Medical and Surgical Journal. April, 1847.

The British and Foreign Medical Review. Edited by JOHN FORBES, M. D. April, 1847.

The Dublin Quarterly Journal of Medical Science. Feb., 1847.

Monthly Journal of Medical Science. Feb., March, 1847.

The Provincial Medical and Surgical Journal. Edited by R. J. N. STREETEN, M. D. Feb., March, April, 1847.

The London Medical Gazette. March, April, May, 1847.

The Dublin Medical Press. Feb., March, April, 1847.

The Medical Times. Feb., March, April, 1847.

The British American Journal of Medical and Physical Science. Edited by ARCHIBALD HALL, M. D., &c. April, May, June, 1847.

Revue Médico-Chirurgicale de Paris. Sous la Direction de M. MALGAIGNE. Jan., Feb., March, April, 1847.

Revue Médicale Française et Etrangère. Par J. B. CAYOL, M. D. P., &c. &c. Sept., Oct., Nov., Dec., 1846. Jan., Feb., 1847.

Gazette Médicale de Paris. Oct., Nov., Dec., 1846. Jan., Feb., March, April, 1847.

Annales de Thérapeutique Médicale et Chirurgicale et de Toxicologie. Par M. LE DOCTEUR ROGETTA. Nov., Dec., 1846. Jan., Feb., March, April, 1847.

Journal de Pharmacie et de Chimie. Nov., Dec., 1846.

Journal de Médecine et de Chirurgie Pratiques. Par LUCAS CHAMPIONNIERE, March, 1847.

Journal des Connaissances Médicales pratiques et de Pharmacologie. Oct., Nov., Dec., 1846. Feb., March, 1847.

La Lancette Canadienne, Journal Médico-Chirurgical. Rédacteur J. L. LEPRONON, M. D. Montreal, Nos. 9, 11, 12.

Southern Journal of Medicine and Pharmacy. Edited by Drs. GAILLARD and DESAUSSURE. May, 1847.

The New Orleans Medical and Surgical Journal, devoted to Medicine, and the collateral Sciences. Edited by DR. D. M. CARPENTER, E. D. Fenner, J. Harrison, and A. Hester. May, 1847.

The Western Lancet and Medical Library. Edited by L. M. LAWSON, M. D. May, 1847.

The Western Journal of Medicine and Surgery. Edited by PROF. DRAKE, NADELLE, and DR. COLESCOTT. April, June, 1847.

The Missouri Med. and Surg. Journal. Edited by THOMAS BARBOUR, M. D. March, 1847.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON and McPHEETERS. April, 1847.

The Missouri Medical and Surgical Journal. Edited by THOMAS BARBOUR, M. D. April, 1847.

The New York Medical and Surgical Reporter. Edited by WM. R. WAGSTAFF, M. D. April, 1847.

The Illinois and Indiana Medical and Surgical Journal. Edited by Drs. BLANEY, BRAINARD, HERRICK and EVANS. April, May, 1847.

Stockton and Co's. Dental Intelligencer. April, 1847.

The American Journal of Pharmacy, published by authority of the Philadelphia College of Pharmacy. Edited by JOSEPH CARSON, M. D., &c. April, June, 1847.

The Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. April, May, June, 1847.

The American Journal of Insanity. Edited by the officers of the New York State Lunatic Asylum, Utica. April, 1847.

The New York Journal of Medicine and the collateral Sciences. Edited by C. A. LEE, M. D. &c. March, 1847.

Southern Medical and Surgical Journal. Edited by P. F. EVE, M. D. and J. P. GARVIN, M. D. April, 1846.

The Annalist; a record of Practical Medicine in the city of New York. Edited by WM. C. ROBERTS, M. D. April, May, June, 1847.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the Amer. Journ. of Med. Sci., care of Messrs. Lea & Blanchard, Philadelphia. Parcels directed as above and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London*; or to Wiley & Putnam, *New York*; or W. D. Ticknor, *Boston*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers, under whose exclusive control it is.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XXVII. NEW SERIES.

JULY, 1847.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART.	PAGE
I. Statistics of the mortality following the operation of tying the Carotid Arteries and Arteria Innominata. By George W. Norris, M. D., Surgeon to the Pennsylvania Hospital.	13
II. On the Endemic Gastro-follicular Enteritis, or "Summer Complaint" of children, as it prevails in the United States. By Edward Hallowell, M. D., Fellow of the College of Physicians of Philadelphia, Member of the Academy of Natural Sciences, &c.	40
III. Note on the frequency of the Pulse, and Respiration of the Aged. By C. W. Pennock, M. D.	68
IV. Hydrotherapy, or the use of Cold Water for the Prevention and Cure of Disease. By Sam. Kneeland, Jr., M. D., of Boston.	75
V. The Treatment and Cure of Crétins and Idiots, with an Account of a Visit to the Institution on the Abendberg in Switzerland. By Buckminster Brown, M. D., of Boston.	109
VI. On Vesico-Vaginal Fistula. By John P. Mettauer, M. D., LL. D., of Virginia.	117
VII. Case of Doubtful Sex. By S. H. Harris, M. D., of Clarksville, Va.	121
VIII. Account of a Physical Sign of Pneumonia of the Apex of the Lungs. By Wm. M. Boling, M. D., of Montgomery, Ala.	125
IX. Cases of Scarlatina. By George K. Pardee, M. D., of Wadsworth, Ohio.	127

REVIEW.

X. A Treatise on the Practice of Medicine. By George B. Wood, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania: one of the Authors of the Dispensatory of the United States of America, &c. &c. In two volumes. Philadelphia: Grigg, Elliot and Co., 1847, 8vo.: pp. 798-840.	133
--	-----

BIBLIOGRAPHICAL NOTICES.

XI. Medical Botany; or, Descriptions of the more important Plants used in Medicine, with their history, properties and mode of administration. By R. Eglesfield Griffith, M. D., &c. &c. With upwards of three hundred illustrations. 1 vol. 8vo. pp. 704: Lea and Blanchard, 1847.	163
XII. On the Pathology and Treatment of Scrofula; being the Fothergillian Prize Essay for 1846. By Robert Mortimer Glover, M. D., Corresponding	

ART.	PAGE
Member of the Medical Society of London, Lecturer on <i>Materia Medica</i> in the Newcastle Medical School. " <i>Hypotheses non fingo</i> "—Newtoni Principia. London, 1846: 8vo. pp. 315, with four plates. - - -	167
XIII. Illustrations of Medical Botany; consisting of coloured figures of the plants affording the important articles of the <i>Materia Medica</i> , and descriptive letterpress. By Joseph Carson, M. D., Professor of <i>Materia Medica</i> , in the Philadelphia College of Pharmacy: Member of the American Philosophical Society, of the Academy of Natural Sciences of Philadelphia; Fellow of the College of Physicians, &c. The Drawings on stone, by J. W. Colen. Philadelphia, Loyd P. Smith, 1847, No. 1, pl. xx. 44. - - -	177
XIV. An Examination into the Health and Longevity of the Southern Seaports of the United States, with reference to the subject of life insurance. By J. C. Nott, M. D., of Mobile, Ala.—(<i>South. Journal of Medicine and Pharmacy</i> , January and March.) 1847, pp. 32, 8vo. - - -	178
XV. On Indigestion, and certain Bilious Disorders often conjoined with it. To which are added short Notes on Diet. By George Chaplin Child, M. D., Physician to the Westminster General Dispensary. London: John Churchill, 1847. 8vo. pp. 219. - - -	181
XVI. 1. Seventh Annual Report of the Superintendent of the Insane Hospital at Augusta, Maine, for 1846.	
2. Tenth Annual Report of the Superintendent of the Vermont Asylum, for the Insane, at Brattleboro, Sept., 1846.	
3. Twenty-ninth Annual Report of the Physician and Superintendent of the McLean Asylum for the Insane, for 1846.	
4. Seventh Annual Report of the Superintendent of the Boston Lunatic Hospital for 1845, 1846.	
5. Fourteenth Annual Report of the Superintendent of the State Lunatic Hospital, at Worcester, Mass., for 1846.	
6. The Twenty-third Annual Report of the Physician and Superintendent of the Retreat for the Insane, Hartford, Connecticut, for the year ending March 31st, 1847.	
7. Fourth Annual Report of the Superintendent of the New York State Lunatic Asylum at Utica, for the year ending Nov. 30th, 1846.	
8. Report of the Pennsylvania Hospital for the Insane, for the year 1846. By Thomas S. Kirkbride, M. D., Physician to the Institute.	
9. The Fourth Annual Report of the Mount Hope Institute, (Baltimore,) for the year 1846. By William H. Stokes, M. D., Physician.	
10. Annual Report of the Physician and Superintendent of the Western Asylum, Virginia, for the year 1846.	
11. Eighth Annual Report of the Superintendent of the Ohio Lunatic Asylum, from Nov. 15, 1845, to Nov. 15, 1846, inclusive.	
12. Report of the Superintendent of the Kentucky Lunatic Asylum, for the year 1846.	
13. Second Annual Report of the Commissioners and Superintendent of the Hospital for the Insane, to the General Assembly of Indiana, Oct. 31st, 1846.	182
XVII. An Analysis of Physiology; being a condensed view of its most important facts and doctrines. Designed especially for the use of Students. By John J. Reese, M. D., Lecturer on <i>Materia Medica</i> , in the Medical Institute of Philadelphia, Fellow of the College of Physicians, Secretary of the Philadelphia Medical Society. 12mo. pp. 314. Philadelphia, 1847, J. G. Auner. - - -	193
XVIII. Observations on Aneurism and its Treatment by Compression. By Dr. O'Bryen Bellingham, M. D., Edin., one of the Surgeons to St. Vincent's Hospital, &c. London, 1847. 12mo. pp. 181. - - -	194
XIX. A Treatise on the Diseases of the Eye. By W. Lawrence, F. R. S., Surgeon Extraordinary to the Queen, Surgeon to St. Bartholomew's Hospital, &c. &c. A New Edition, with many Modifications and Additions, and the Introduction of nearly two hundred Illustrations. By Isaac Hays, M. D., Surgeon to Wills' Hospital, Physician to the Philadelphia Orphan Asylum, &c. &c. Philadelphia, Lea and Blanchard, 8vo. pp. 900. - - -	196

ART.

	PAGE
XX. Proceedings of the National Medical Conventions held in New York, May, 1846, and in Philadelphia, May, 1847. Philadelphia: printed for the American Medical Association, 1847. 8vo. pp. 175: - - -	196

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE
MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

	PAGE		PAGE
1. On the Physiology of the Human Voice. By John Bishop, Esq. - 197	197	George Rainey, Esq. - - -	198
2. On the Anatomy and Physiology of the Vascular Fringes in Joints and the Sheaths of Tendons. By		3. Functions of the Pneumogastric Nerves. By M. Sandras. - - -	198
		4. Formation and Structure of Membrana decidua. By Dr. Sharpey, 199	199

ORGANIC CHEMISTRY.

5. On Creatine and its Office in the Animal Economy—and on Creatinine. By J. Liebig. - - -	200	6. On the Characters of the Blood in Cancerous Diseases. By Dr. Heller. - - - - -	201
--	-----	---	-----

MATERIA MEDICA AND PHARMACY.

7. Acid Nitrate of Mercury. By Dr. Neligan. - - - - 202	202	14. Ether Vapour Enemata. By M. Pirogoff. - - - - -	205
8. Valerianate of Zinc. By Dr. Neligan. - - - - 202	202	15. Comparative Utility of the Bromide and Iodide of Potassium, in the treatment of secondary and tertiary forms of Syphilis. By John Egan, M.D. - - - - 206	206
9. Red Pepper. - - - - 202	202		
10. Rhatany. - - - - 203	203	16. Substitute for the Vapour of Ether to annul sensation during operations. By Dr. Dauriol. - - 207	207
11. Peruvian Bark. - - - - 203	203		
12. Sea-moss as a bandage for Fractures. - - - - 204	204		
13. Physiological Effects of Ether. 204	204		

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

17. On the Causes of Cyanosis. By Norman Chevers, M.D. - - - 207	207	19. On the Pathological Anatomy of Perichondritis Laryngea. By J. H. Jansen. - - - - - 213	213
18. Detection of Sugar in the Expectoration of Patients affected with Diabetes. By Dr. Francis. 212	212	20. On some Appearances in cases of so called Purulent Poisoning	

	PAGE		PAGE
of the Blood. By Dr. Hertzveld.	214	Opium. - - - - -	220
21. Phlegmasia Dolens in a Male. By M. Blandin. - - -	217	28. Effects of sudden changes of Temperature. By Von Littrow.	220
22. On the Local Treatment of Amenorrhœa. By A Legrand. -	217	29. On Cynanche Laryngea, or Acute Edematous Inflammation of the Larynx. By George Budd, M. D. - - - - -	221
23. Chenopodium in Amenorrhœa. By Mr. Houlton. - - -	218	30. Tincture of Iodine in obstinate Intermittent Fevers. By Dr. Se- quin. - - - - -	223
24. Alum in Pertussis. By Dr. Davies. - - - - -	218	31. Mediastinitis. By Dr. C. Pfeufer.	223
25. Bismuth in Diarrhœa. By Rayer.	219	32. A Simple remedy for Cramps in the Lower Extremities. By Dr. S. A. Bardsley. - - -	223
26. On Tubercular Pericarditis with Pathological and Practical Re- marks. By George Burrows, M. D. - - - - -	219	33. Rigidity of the Arch of the Aorta. By Dr. Bellingham. - - -	224
27. Cutaneous Eruptions induced by various Medicinal substances.			

SURGERY.

34. Pathological and Clinical Obser- vations on Cancer. By J. Hughes Bennett, M. D. - - -	225	Dr. Roeser. - - - - -	242
35. Ovarian Dropsy treated by es- tablishing a direct communication from without, with the interior of the cyst. By W. H. Bainbridge, Esq. - - - - -	231	40. Galvano-Puncture in the Treat- ment of Aneurism. - - -	243
36. Successful removal of an Ova- rian Tumour complicated with pregnancy. By H. E. Burd, Esq.	236	41. Iodine and Iodide of Potassium in the Treatment of Syphilis. By Dr. F. A. Aran. - - -	243
37. Case of Tracheotomy. By Mr. Orr. - - - - -	239	42. Descent of the Spleen into the Pelvis with symptoms of Sub- acute Peritonitis and of Intestinal Strangulation. By M. Bozzi. -	245
38. On the use of Starch Bandages. By Dr. Rognetta. - - -	241	43. Ligature of external Iliac Ar- tery. By John Davies. - - -	245
39. Diagnosis of Strangulated Her- nia in the Foramen Ovale. By		44. Diagnosis of Mercurial Sore. By Dr. Porter. - - - - -	245
		45. Mercurial Action not a Preven- tive of Secondary Symptoms. By Mr. Holmes Coote. - - -	246

OPHTHALMOLOGY.

46. Symblepharon. By Mr. Wildie.	246	By Herr Böhm. - - - - -	248
47. Opacities of the Cornea. By Mr. Wildie. - - - - -	247	50. On a luminous appearance of the Human Eye, and its applica- tion to the detection of disease of the retina and posterior part of the eye. By Wm. Cumming. - - -	248
48. Causes of Strabismus. - - -	248		
49. Strabismus and Partial Amauro- sis from thickening of Neurilem- ma of a portion of Optic Nerve.			

MIDWIFERY.

51. Effects of the Ergot of Rye on the Parturient female and her off- spring. By Dr. Samuel L. Hardy.	251	mental interference. By Mr. Woodhouse. - - - - -	252
52. Prolapsus of the Cord terminat- ing favourably without instru-		53. Spontaneous Amputation in a new-born Child. By M. Paul Dubois. - - - - -	253

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

54. Effects of the Vapours of Phos- phorus on Workmen. By M. Chevalier. - - - - -	253	55. Nicotine. By M. Schloesing. -	253
		56. Poisoning in Java. The Gecko.	254
		57. Remarkable English state Trials.	254

	PAGE		PAGE
58. Trial of Earl Ferrers before the House of Lords for murdering his steward. - - - -	254	68. Formation of Alcohol in the system? By Mitscherlich. -	259
59. The Douglas Cause. - - -	255	69. Coffee as an antidote to Acetate of Morphia. - - - -	259
60. Miss Blandy for poisoning her father. - - - -	255	70. On the changes effected in Hydrated Peroxide of Iron when kept in water. By M. G. C. Wittstein. - - - -	259
61. Trial of Spencer Cowper for the murder of Miss Stout. - -	255	71. Datura Sanguinea. - - -	260
62. Coke and Woodburn Case. -	256	72. Poisoned Weapons of the Peruvian Indians. - - - -	260
63. Unborn Child recognized by the law, so that estate may vest in it.	257	73. Infanticide in Madagascar. -	261
64. Solium Temulentum. By Professor Pfaff. - - - -	258	74. Amussat on the Effects of the Inhalation of Ether on animals and man. - - - -	261
65. Death from taking Ammonia. -	258	75. Feigned Diseases detected through the inhalation of ether. -	262
66. Poisoning with Arsenic in Cayenne. - - - -	258		
67. Softening of the Mucous Membrane of the Stomach. - -	259		

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Symblepharon successfully treated by plastic operation. By I. Hays, M. D. - - - -	263	Case of Ligature of Common Carotid, for removal of Parotid Gland. By A. B. Shipman, M. D. - -	264
Treatment of Acute Articular Rheumatism by cold applications to the affected joints, with opium and quinine at night. By W. S. W. Ruschenberger, M. D. - -	263	Case of Excision of the whole of the Genital Organs. By E. W. H. Beck.	265
		Case of Carcinomatous Tumour, attached to the pelvis of the left kidney. By C. D. Gloninger, M. D.	266

DOMESTIC SUMMARY.

Battle of Monterey. By Dr. N. S. Jarvis. - - - -	266	On the powers of Strychnine in the cure of Chronic Bronchitis. By Dr. P. H. Clarke. - - -	275
On Fracture of the Skull in Children. By F. H. Hamilton, M. D. - -	269	American Medical Association. -	276
Statistics of Private Obstetric Practice. By James C. Bliss, M. D. -	271	New Works. - - - -	276
Bifid Vagina. By Prof. S. H. Dickson. - - - -	275	University of Pennsylvania. - -	277
Inversion of the Uterus successfully treated. By E. H. M'Coy, M. D.	275	Graduates of Jefferson Medical College of Philadelphia, March, 1847. - - - -	279

NOTICE.

NUMBERS OF THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES FOR JANUARY, 1847.—A large edition of this number having been exhausted in the hands of the publishers, such persons as have received copies and will now exchange or dispose of them, will please address the publishers, who want copies to complete sets for this year.

THE
AMERICAN JOURNAL
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FOR JULY, 1847.

ART. I.—*Statistics of the mortality following the operation of tying the Carotid Arteries and Arteria Innominata.* By GEORGE W. NORRIS, M. D., Surgeon to the Pennsylvania Hospital.

IN the numbers of this Journal for July 1845, and January 1847, I published tables showing the mortality, accidents, &c., following the operations of ligature of the subclavian and iliac arteries. These tables formed parts of an extensive series of cases of ligature of the larger vessels which I collected, for the most part several years since, and finding that they have attracted some attention, I have been induced to proceed in their publication, and now offer to the profession those of the carotids drawn out upon a similar plan. Close examination of the cases recorded in the present tables shows that the operation of deligating the carotid has been too generally looked upon as one of but comparatively little danger; an analysis of them proves that serious symptoms frequently follow the mere cutting off of the supply of blood to the brain through this vessel, at the same time that it strikingly exhibits the frequency and severity of the other accidents which follow it, and throws some light upon the rate of mortality attendant upon operations on the great vessels of the neck.

No. XXVII.—JULY, 1847.

SERIES I.—

No.	Surgeon.	Sex.	Age	Right or left side.	Disease.	Duration of disease.	Ligature separated.
1	Cooper	Female	44	Right side	Aneurism	5 months	11th day
2	Cooper	Male	50	Left side	Aneurism	7 months	22d and 23d days
3	Cline	Male			Aneurism		
4	Macaulay	Male	36	Left side	Aneurism from wound	5 days	
5	Post	Male	35	Right side	Aneurism	10 months	16th and 18th days
6	Dupont	Male	27	Left side	Aneurism	6 months	
7		Female			Aneurism from wound	6 weeks	14th day
8	Coates	Male	41	Left side	Aneurism	6 months	
9	Porter	Female	40	Right side	Aneurism	15 years	19th day
10	Vincent	Male	52	Right side	Aneurism	3 weeks	22d day
11	Holscher	Male	23	Right side	Aneurism		15th day
12	Perry	Male	39	Right side	Aneurism	2 years	13th day
13	Sykes	Female	18	Right side	Aneurism	3 years	10th day
14	Key	Male	40		Aneurism	5 months	7th day
15	Warren	Male	42	Left side	Aneurism	4 years	
16	Lisfranc	Female		Right side	Supposed aneurism		
17	Scarpa	Female	29	Right side	Aneurism		21st day
18	Vincent	Male	48	Right side	Aneurism	8 months	
19	Maurin	Male	40	Left side	Aneurism	1 month	
20	Sisco	Male	17	Left side	Aneurism from wound	2 or 3 weeks	14th day
21	Lyford	Male	36		Aneurism	3 weeks	27th day
22	Chiari	Male	28	Left side	Aneurism from wound		
23	Green	Male	65	Right side	Aneurism	5 months	24th day
24	Dehane	Female	10	Right side	Aneurism from wound		11th day
25	Marchal	Male	25	Left side	Aneurism from wound	2 months	
26	Randolph	Male	25	Right side	Varicose aneurism		
27	Robertson	Male	52	Right side	Aneurism	2 months	17th day
28	Porter	Male	38	Left side	Aneurism	5 weeks	15th day
29	B. Cooper	Male	34	Right side	Aneurism	12 months	33d day
30	Kerr	Female	67	Right side	Supposed aneurism		26th day
31	Liston	Male	9	Right side	False aneurism	2 months	
32	Johnson	Male	29	Right side	Aneurism	5 weeks	22d day
33	Syme	Female	60		Aneurism of internal carotid	5 months	
34	Fairfax	Female		Left side	Aneurism		
35	Eccles	Male	46	Right side	Supposed aneurism		
36	Duncan	Female	30	Right side	Aneurism		
37	O'Reilly	Male	44	Right side	Supposed aneurism	2 years	
38	White	Male	34	Right side	Aneurism	3 months	10th day

ANEURISMS.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
November 1, 1805	Died	21st day	Inflammation of sac	Med. Chirurg. Transacts., vol. i.
June 22, 1808	Cured			Med. Chirurg. Transacts., vol. i.
December 16, 1808	Died	4th day	Hemorrhage	Lond. Med. Review, vol. ii.
December 16, 1812	Cured			Edin. Med. and Surg. Journ., vol. x.
January 9, 1813	Cured			Amer. Med. and Phil. Register, vol. iv.
1814	Cured			Breschet's Trans. of Hodgson, tom. ii.
	Cured			Hodgson on the Arteries, 1815.
January 3, 1817	Died	70th day	Hemorrhage	Med. Chirurg. Transacts., vol. xi.
August 21, 1829	Cured			Dublin Hosp. Reports, vol. v.
December 19, 1818	Died	33d day	Inflammation of sac	Med. Chirurg. Transacts., vol. x.
Sept. 27, 1819	Cured			Lond. Med. Repository, vol. xvi.
Nov. 14, 1820	Cured			Glasgow Med. Journ., vol. iv.
June 20, 1821	Cured			Philadelphia Journ., vol. vi.
January 24, 1824	Died	10th day		Lancet, vol. i., 1823-4.
October 26, 1827	Cured			Boston Med. & Surg. Journ., vol. i.
1827	Died	8th day	Hemorrhage	Am. Journ. of Med. Sci., vol. ii.
May 23, 1828	Cured			Lancet, vol. i., 1828-9.
July 18, 1829	Died	7th day	Inflammation of brain	Med. Chirurg. Transacts., vol. xxix.
Nov. 20, 1829	Cured			Lond. Med. & Phys. Journ., vol. viii., N. S.
	Cured			Archives Générales, tom. xxiii.
October 30, 1818	Cured			Med. Chirurg. Transacts., vol. xi.
July 18, 1829	Died	9th day		Méd. Opérat. of Velpeau, tom. 2, 1839.
April 15, 1831	Recovered			Dublin Journal and South's Trans. of Chelius.
January 20, 1832	Cured			Am. Journ. of Med. Sci., vol. x.
June 19, 1835	Died	6th day		Journal Hebdomadaire, tom. iv.
1836	Died	day after	Congestion of brain	At Pennsylvania Hospital.
March 21, 1837	Cured			Dublin Journal, vol. xii.
September 22, 1838	Died	6 w'ks after	Hemorrhage	Dublin Journal, vol. xvii.
April 7, 1840	Cured			Guy's Hospital Reports, No. 13, 1841.
April 30, 1840	Recovered			Edin. Med. & Surg. Journ., vol. lxi.
October 21, 1841	Died	15th day	Hemorrhage	On a variety of False Aneurism, 1842.
January 22, 1842	Cured			Lond. Med. Gazette, vol. ii., 1841-2.
April, 1842	Died	in 30 hours		London and Edin. Monthly Journ., 1842.
July 18, 1842	Died	5th day	Exhaustion	Philada. Medical Examiner, vol. vi.
Sept. 23, 1843	Recovered			Lancet, 1844.
December 25, 1843	Died	17th day	Spasm of glottis	Edin. Med. & Surg. Journ., vol. lxii.
July 20, 1844	Died	9th day	Apoplexy	Dublin Medical Press, Oct. 1844.
August 28, 1845	Cured			Lancet, February 1846.

SERIES II.—

No.	Surgeon.	Sex.	Age	Right or left side.	Disease.	Duration of disease.	Ligature separated.
1	Fleming	Male			Hemorrhage after wounded throat		
2	Abernethy	Male		Left side	Wounded throat		
3	Twitchell	Male	20	Right side	Hemorrhage after wounded neck	10 days	13th day
4	Dupuytren	Male	42	Right side	Hemorrhage after gunshot wound	22 days	
5	Marjolin	Male	20		Hemorrhage after gunshot wound	6 days	
6	Giroux				Hemorrhage after gunshot wound		
7	Collier	Male	29	Left side	Hemorrhage after wound at angle of jaw	5th day	13th day
8	Travers	Male		Right side	Hemorrhage from fungous tumour of cheek		
9	Brodie	Male	27	Left side	Hemorrhage following extraction of a tooth		
10	Brown	Male	35	Right side	Hemorrhage after wounded throat	7 days	12th day
11	Cusack	Male	36		Wounded throat		21st day
12	Boileau	Male	36	Right side	Wounded throat		
13	De Cruz	Male	44	Left side	Wounded throat		
14	Miller	Female			Hemorrhage after wounded throat	27 days	
15	Travers	Male	35	Right side	Wounded throat		13th day
16	Mayo	Male	23	Right side	Hemorrhage from ulcer in throat		15th day
17	Luke	Male	45	Left side	Hemorrhage from ulcer in throat		22d day
18	Langenbeck	Male	29		Hemorrhage after tying thyroids for goitre		
19	Horner	Male	34	Right side	Wounded throat		24th day
20	Syme	Male	9	Left side	Hemorrhage from ear and fauces		
21	Tyerman	Male	35	Right side	Wounded throat		11th day
22	Mayo	Male	30	Right side	Hemorrhage after wounded throat	8 days	
23	Ellis	Male	28		Hemorrhage after wounded throat	8 days	9th day
24	Bedor	Male	20	Left side	Hemorrhage after wounded throat		14th day
25	Duncan	Male	60	Left side	Hemorrhage from ulcer in throat		
26	Sedillot	Male	19	Right side	Hemorrhage following wound of ext. carotid	13 days	
27	Spence	Male	38	Left side	Hemorrhage from ulceration of face		
28	Peace	Male	22	Right side	Hemorrhage from ulceration behind jaw		12th day
29	Vincent	Male	28	Right side	Hemorrhage after wounded tongue	8 days	
30	Clark	Male	29	Left side	Wound of external carotid		16th day

WOUNDS, &c.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
October 17, 1803	Cured			Med. Chir. Review, Jan. 1827.
	Died	30 hours after	Inflammation of brain	Surgical Works, vol. ii.
October 18, 1807,	Cured			New Eng. Quarterly Journ. of Med. and Surg., Oct. 1842
February 24, 1814	Died	6th day		Breschet's Trans. of Hodgson, tom. ii.
1814	Died	2d day	Hemorrhage	Breschet's Trans. of Hodgson, tom. ii.
1814	Died	9th day	Effusion of blood at base of brain	Breschet's Trans. of Hodgson, tom. ii.
June 22, 1815	Cured			Med. Chir. Transacts., vol. vii.
April 13, 1816	Died	16th day		Lond. Med. and Phys. Journ., April, 1827
July 5, 1816	Died	2d day		Med. Chir. Transacts., vol. viii.
June 14, 1817	Cured			Dublin Hospital Reports, vol. i.
August 16	Died	60th day	Hemorrhage	Dublin Hosp. Reports, vol. iii.
July 22, 1822	Cured			North American Med. & Surg. Journ., vol. i.
February 27, 1825	Cured			Boston Med. & Surg. Journ., vol. ii.
October 9, 1825	Cured			Western Journal, vol. i.
June 27, 1826	Died	58th day	Hemorrhage	Lond. Med. and Phys. Journ., vol. i., N. S.
October 19, 1828	Cured			North American Med. & Surg. Journ., April, 1830.
October 4, 1829	Cured			London Medical Gazette.
1829	Died	24 hours after	Inflammation of brain	Archives Générales, tom. xix.
June 18, 1832	Cured			Am. Journ. of Med. Sci., vol. x.
September 18, 1832	Cured			Edin. Med. and Surg. Journ., vol. xxxviii.
August 14, 1834	Cured			Med. Chir. Review, vol. xxiv., N. S.
1834	Died	13th day	Inflammation of brain	Medical Quarterly Review, vol. i.
January 26, 1835	Cured			Lancet, vol. ii., 1834-5.
April 24, 1835	Cured			La Presse Médicale, No. x.
March 29, 1836	Died	14th day	Bronchitis	Edin. Med. & Surg. Journ., vol. lxii.
April, 1842	Died	10th day		Gazette Médicale, No. xxxvi., 1842.
May 29, 1842	Died	61st day	Exhaustion	London & Edinburgh Monthly Journal, vol. ii.
November 8, 1844	Died	31st day	Hemorrhage	At Pennsylvania Hospital.
April 16, 1845	Died	6th day	Hemorrhage	Medico-Chirurg. Transacts., vol. xxix.
October 14, 1846	Cured			Lond. Med. Gazette, Feb. 1847.

SERIES III.—IN EXTIRPATION

No.	Surgeon.	Sex.	Age	Right or left side.	Disease.	Duration of disease.	Ligature separated.
1	Cogswell	Female	37	Left side	Parotid tumour	6 months	14th day
2	Goodlad	Female		Left side	Parotid tumour		11th day
3	Mott	Male	49	Right side	Fungous tumour in neck		14th day
4	Mott	Female	17	Right side	Osteo-sarcoma of jaw	2 years	15th day
5	Mott	Female	22	Left side	Osteo-sarcoma of jaw	1 year	14th day
6	Mott	Male	18	Right side	Osteo-sarcoma of jaw	6 years	
7	Awl	Female	12	Right side	Ossific tumour of jaw	18 months	
8	Fouilloy	Female	52	Left side			15th day
9	Stedman	Male	58	Right side	Parotid tumour	12 years	26th day
10	Scott	Male	45	Right side	Tumour of face	4 months	
11	Ewing	Male	52	Right side	Tumour in neck	30 years	
12	Mott	Female	19		Tuberculated sarcoma of neck	5 years	
13	Gibson	Male	17	Left side	Medullary tumour in neck	5 years	36th day
14	Luzenburg	Male	62	Left side	Parotid tumour	20 years	
15	Warren	Male	52	Right side	Scirrhus tumour in neck	30 years	
16	Roux	Female	30	Right side	Parotid tumour	2 years	
17	Brett	Female	17		Parotid tumour	5 years	
18	C. B. Gibson	Female	35	Right side	Osteo-sarcoma of jaw	6 years	22d day

SERIES IV.—CEREBRAL

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease.
1	Liston	Female	24	Left side	"Beating pain in left cheek and jaw, stretching to the throat, and, indeed, involving whole head."
2	Becton	Male	22	Left side	Epilepsy
3	Preston	Male	50	Right side	Hemiplegia of left side
4	Preston	Male	25		Epilepsy
5	Preston	Male	51	Right side	Epilepsy and hemiplegia
6	Preston	Male	24	Right side	Headache and partial paralysis

OF TUMOURS.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
Nov. 4, 1803	Died	20th day	Hemorrhage	New England Journ. of Med. and Surg., vol. xiii., 1824.
Sept. 5, 1815	Cured			Medico-Chirurg. Transacts., vol. vii.
Nov. 14, 1818	Died	3 months and 19 days after		Med. & Surg. Register, Part 2d.
Nov. 18, 1821	Cured			New York Med. and Phys. Journ., vol. i.
March 30, 1823	Cured			New York Med. and Phys. Journ., vol. ii.
May 15, 1823	Died	4th day	Inflammation of chest	New York Med. and Phys. Journ., vol. ii.
1827	Cured			Western Journal, vol. i.
1828	Cured			Archives Générales, tom. xviii.
Sept. 7, 1830	Cured			Medico-Chirurgical Review, vol. xvi., N. S.
Feb. 4, 1832	Died	42 hours after	Convulsions	London Medical Gazette, vol. ix., 1832.
Feb. 11, 1832	Died	4th day	"Gradually sunk"	Edin. Med. and Surg. Journal, vol. xxxviii.
February 1832	Cured			Am. Journ. of Med. Sci., vol. xii.
Nov. 20, 1832	Cured			Am. Journ. of Med. Sci., vol. xiii.
1834	Cured			Annales de Chirurgie, tom. vi.
March 7, 1837	Recovering on 8th day			On Tumours, p. 183.
June 19, 1837	Died	14th day		Gazette des Hôpitaux, 1837.
	Cured			India Journ. of Med. & Phys. Sci., August, 1839.
June 12, 1844	Cured			Am. Journ. of Med. Sci., vol. viii., N. S.

AFFECTIONS.

Duration of disease.	Ligature separated.	Date of operation.	Result.	Work.
	22d day	June 22, 1817	Recovered	Edin. Med. and Surg. Journ., vol. xvi.
9 years		March 21, 1827	Recovered	North American Med. & Surg. Journ., vol. iv.
1 month	18th day	November 22, 1830	Recovered	Transactions Med. Phys. Soc. of Calcutta, vols. v. & vi.
5 years	29th day	February 4, 1831	Recovered	Transactions Med. Phys. Soc. of Calcutta, vols. v. & vi.
Fits 6 years, palsied 20 days		August 23, 1831	Recovered	Transactions Med. Phys. Soc. of Calcutta, vol. vi.
		September 2, 1831	Recovered	Transactions Med. Phys. Soc. of Calcutta, vol. vi.

SERIES V.—ERECTILE TUMOURS, TUMOURS OF

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease.	Duration of disease.	Ligature separated.
1	Travers	Fem.	34	Left side	Erectile tumour in orbit	4 years & 5 months	21st and 22d days
2	Dalrymple	Fem.	44	Left side	Erectile tumour in orbit	9 months	27th day
3	Wardrop	Male	six wks	Left side	Erectile tumour in cheek	6 weeks	
4	Dupuytren	Male	20	Right side	Erectile tumour of ear and temple		12th day
5	Jameson	Male	26		Fungus of the antrum	13 months	
6	Arendt	Male	35	Right side	Erectile tumour of face		17th day
7	Pattison	Male	18	Left side	Erectile tumour of face	8 years	
8	Davidge	Male		Left side	Fungus of the antrum		
9	Finley	Male		Right side	Fungus of the antrum	some months	
10	Barovero	Male		Right side	Tumour behind the jaw		19th day
11	McClellan	Fem.	5	Left side	Erectile tumour in orbit	4½ years	14th day
12	McClellan	Fem.	9	Left side	Erectile tumour of cheek		14th day
13	McClellan	Male	16	Right side	Vascular fungus from dura mater		about 2 weeks
14	Wardrop	Fem.	five mos.	Left side	Erectile tumour of face		11th day
15	Frick				Cancer of parotid		
16	Mayo	Male	26	Right side	Fleshy tumour of neck		17th day
17	Magendie	Fem.	25	Left side	Tumour of maxillary sinus		11th day
18	Wardrop	Male	22	Left side	Erectile tumour of face and head	12 years	25th day
19	MacLachlan	Male	30	Left side	Pulsating tumour on scalp		
20	Williamme	Male	24	Left side	Fungous tumour on temple		21st day
21	Warren	Fem.	18	Right side	Erectile tumour in orbit		
22	Bushe	Male	19	Left side	Erectile tumour on inside of cheek	from birth	29th day
23	D. L. Rogers		eight mos.	Right side	Erectile tumour of face	from birth	
24	Mayo	Male	five mos.	Left side	Erectile tumour of face		8th day
25	Mighels	Fem.	23	Left side	Erectile tumour of face and occiput	2 years	30th day
26	Velpeau	Male	16	Left side	Erectile tumour of temporal fossa		
27	Chelius	Male	19	Right side	Aneurismal varix of temple	1 year	21st day
28	Busk	Male	20	Right side	Erectile tumour in orbit	6 months	13th day
29	Scott	Male		Right side	Erectile tumour in orbit	1 month	
30	Miller	Fem.	42	Right side	Erectile tumour in orbit	18 months	
31	Peyroff		nine mos.	Left side	Erectile tumour on occiput	9 months	removed on 8th day
32	Zeiss		fifteen mos.	Left side	Erectile tumour of face	15 months	8th day
33	Jobert	Male		Right side	Erectile tumour in orbit	3 years	1 month after
34	Auchinloss	Fem.	23	Left side	Erectile tumour on temple	from birth	19th day
35	Velpeau	Male		Right side	Erectile tumour in orbits		
36	Cadwell	Fem.	60	Right side	Erectile tumour in orbit	1 year	39th day
37	Dudley	Male		Right side	Erectile tumour in orbit	several years	
38	Blackman	Male	30	Right side	Fungous tumour of neck	2 years	
39	Liston	Male	20		Arterial varix of scalp		
40	A. C. Post	Male	27	Right side	Erectile tumour of cheek	spot from birth, but increasing for 3 years	20 months
41	Bos	Fem.	17	Right side	Tumour of the diploe	5 months	
42	Petrequin	Male	22	Left side	Erectile tumour in orbit		

DIPLOE, JAW, MAXILLARY SINUS, AND NECK.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
May 23, 1809	Cured			Med. Chirurg. Transacts., vol. ii.
April 7, 1813	Cured Died	14th day	Irritation of ulcer	Med. Chirurg. Transacts., vol. vi. Med. Chirurg. Transacts., vol. ix.
April 8, 1818	Recovered			Leçons Orales, tom. iv.
Nov. 11, 1820	Cured			Philad. Med. Recorder, vol. iv.
Nov. 8, 1821	Cured			Lancet, 1828-9.
	Cured			Burns' Anat. of Head and Neck, 1823.
April, 1823	Died	6 weeks	Lock-jaw	Burns' Anat. of Head and Neck, 1823.
July 27, 1824	Recovered			Maryland Medical Recorder, vol. i.
May 19, 1825	Died	69th day	Inflammation of brain	Journ. de Physiologie, tom. vii.
June 10, 1825	Cured			N. Y. Med. & Phys. Journ., vol. v.
	Cured			N. Y. Med. & Phys. Journ., vol. v.
	Cured			N. Y. Med. & Phys. Journ., vol. v.
March, 1826	Cured			Lancet, vol. xii.
	Died		Long continued constitutional disturbance occasioned by disease.	Lancet, vol. xii.
Jan. 20, 1827	Recovered			Lond. Med. and Phys. Journ., vol. v., N. S.
March 4, 1827	Recovered			Journ. de Physiologie, tom. vii.
	Cured			Lancet, vols. xii. and xiii.
July 10, 1825	Died	4th day	Inflammation of chest	Glasgow Med. Journ., vol. i.
June 26, 1829	Recovered			Journ. Univers. Hebdom., tom. iii.
January 2, 1830	Cured			On Tumours.
January 15, 1830	Cured			Med. Chirurg. Bulletin, vol. i.
Dec. 12, 1832	Cured			Am. Journ. of Med. Sci., vol. xiii.
	Recovered			Med. Quarterly Review, vol. i.
March 12, 1835	Cured			Boston Med. and Surg. Journ., vol. xx.
	Died	16th day	Repeated hemorrhages	Méd. Opératoire, tom. ii., 1839.
Jan. 18, 1836	Recovered			Gabe on Aneurismal Varix, 1844
Feb. 2, 1836	Cured			Med. Chirurg. Trans., vol. xxii.
Nov. 10, 1836	Cured			Med. Chirurg. Trans., vol. xxii.
	Died	8 days after	Apoplexy	Lond. & Edin. Monthly Journ., vol. ii.
Jan. 26, 1837	Died	117 days after	Hemorrhage	Revue Médicale, 1838.
August 30	Died	114 days after	Convulsions	Revue Médicale, 1838.
August 7, 1839	Cured			Gazette Médicale, 1840.
July 7, 1839	Cured			London Medical Gazette, vol. i., 1842-3.
	Recovered			Gazette Médicale, 1840.
Sept. 16, 1840	Cured			Boston Med. and Surg. Journ., vol. xxiv.
January 1841	Cured			Transactions of College of Physicians of Philada., 1842.
June 21, 1843	Died	8th day	Long continued constitutional disturbance	Am. Journ. of Med. Sci., vol. x., N. S.
	Died	10 da's after	Hemorrhage	Lancet, 1844.
April 12, 1845	Died		Phlebitis of internal jugular	New York Journ. of Medicine, vol. v.
	Died		Diarrhœa & hemorrhages	Archives Générales, 1845.
June 5th, 1845	Recovered			Gazette Médicale, 1846.

SERIES VI.—BRASDOR'S

No.	Surgeon.	Sex	Age	Right or left side.	Disease.	Date of operation.	Result.	Period of death.	Cause of death.	Work.
1	Wardrop	Fem.	75	Right	Aneurism of root of carotid	June, 1825	Recovered			On Aneurism
2	Wardrop	Fem.	57	Right	Aneurism of root of carotid	Dec. 10, 1826	No improvement			On Aneurism
3	Lambert	Fem.	49	Right	Aneurism of root of carotid	March 1, 1827	Recovered			On Aneurism
4	Bush	Fem.	36	Right	Aneurism of root of carotid	Sept. 11, 1827	Recovered			On Aneurism
5	Evans	Male	30	Right	Aneurism of arteria innominata and root of carotid	July 22, 1828	Recovered			Villardebo These
6	Montgomery	Male	40	Left	Supposed aneurism of carotid	March 10, 1829	Recovered			Med. Chirurg. Review, Jan. & April, 1830
7	Mott	Male	51	Right	Aneurism of arteria innominata	Sept. 26, 1829	Recovered			Am. Journ. of Med. Sci., vols. v. & vi.
8	Wickham	Male	55	Right	Aneurism of arteria innominata	Sept. 25, 1829	Recovered			Lancet, 1840
9	Key	Fem.	61	Right	Aneurism of arteria innominata	July 20, 1830	Died	A few hours after operat'n	want of am't of blood necessary to innervation	Lond. Med. Gazette, July, 1830
10	Morrison	Male	42	Right	Aneurism of arteria innominata and root of carotid	Nov. 8, 1832	Recovered			Am. Journ. of Med. Sci., vol. xix.
11	Fearn	Fem.	28	Right	Aneurism of the innominata	Aug. 30, 1836	Recovered			Lancet, 1836-38
12	Colson	Fem.	63	Left	Aneurism of root of carotid	1839	Recovered			Gaz. Médicale, Sept. 1840, & Mems. French Acad., 1841
13	Ferguson	Male	56	Right	Aneurism of arteria innominata & root of subclavian	June 22, 1841	Died	7th day	Pleuro-pneumonia	Am Journ. of Med. Sci., vol. iii., N. S.
14	O'Shaughnessy	Male	42	Right	Aneurism of aorta, supposed to be of the root of carotid and innominata		Died	10th day	Rupture of aorta	Gaz. Médicale, No. xviii., 1843
15	Campbell	Male	48	Right	Supposed aneurism of arteria innominata	March 8, 1845	Died	19th day	Pneumonia	Lond. & Edin. Monthly Journ. 1845

OPERATION.

REMARKS.

Progressive diminution of tumour after operation till the 5th day, when it increased, inflamed, suppured, and ulcerated. Upwards of three years after the operation the patient continued to enjoy good health.

Tumour did not diminish after operation. About three weeks after it the swelling increased, and its pulsations became stronger. Patient died March 23, 1827. On dissection the heart was found hypertrophied. *The carotid artery was found to be completely pervious, and could hardly have been tied.*

Tumour diminished in size, and finally entirely disappeared. Five weeks after operation the wound, which had healed, reulcerated. April 18, hemorrhage from wound, which was repeated at intervals till 23d; again on 1st of May, when she died. On dissection pericarditis and dilatation of aorta. Sac filled with coagulum. Carotid thickened, and lower part of it completely closed. Just above where the ligature was applied an ulcerated opening of it existed.

The tumour was very large and suffocation imminent. After the operation it rapidly diminished. On 27th day after it the wound was healed, and the tumour was reduced to one-half its former bulk. Patient was alive and well in March, 1830.

Pulsation stronger on 23d. By 22d October tumour had diminished one-third, was hard, and pulsation scarcely perceptible in it. On 8th August, 1830, tumour suppurated and discharged about oz. xxiv of pus mixed with a number of hairs. The opening was enlarged, and two fleshy tumours, of the size of a small pullet's egg, were brought into view by it, having on their surface several hairs analogous to those which had been discharged. A ligature was put around that which first presented, as low as possible behind the sternum, and it was allowed to slough off. The second was also tied, and then removed by the knife close to the ligature. After this the cavity of the sac contracted, and by end of November was completely cicatrized. On 16th May 1831, she enjoyed perfect health, and all trace of tumour had disappeared.

By 14th March the tumour was reduced to half its size, but on 25th again enlarged, and on 29th May gave way and discharged oz. viii of dark fetid fluid. On following day the opening was enlarged and gave exit to coagula. On 3d July expectorated oz. vi of fluid blood, and died on 12th. Dissection showed no vestige of sac remaining. Left carotid was obliterated from the bifurcation to aorta. A distinct aneurism of aorta, of the size of an orange, existed between the arteria innominata and the left carotid.

The pulsation in and size of tumour gradually diminished after the operation, and by 16th of October both had entirely disappeared. The patient died from suffocation April 22, 1830. Dissection showed the right carotid to be obliterated. No tumour externally, internally was of the size of the two fists.

Immediately after the operation the tumour grew less, and the pulsation in it diminished. In December the tumour was increasing rapidly, and was more than double its original size, and on the 3d of that month the subclavian was tied. This operation was followed by relief of symptoms, but the tumour continued slowly to increase. He died 16th Feb., 1840, from bursting of the sac. Dissection showed the aneurism to be seated in the innominata. The aorta was dilated and studded with osseous plates.

On autopsy found aneurism of the innominata and of the cross of the aorta. The left carotid was almost obliterated, and the vertebrals smaller than in the natural state.

Afternoon of operation pulsation in the tumour "was tremendous." After the 17th it became weaker, and tumour began to harden and diminish in size. He returned to his employment (charcoal maker), and dropped down dead 20 months after the operation. The arteria innominata was double its natural size, and studded with spiculæ of ossific matter. Right carotid, from its origin to point at which ligature had been applied, was dilated into a sac, which was plugged up by a dense fibrinous deposit.

By 9th Sept. tumour had lessened considerably, and the pulsations were less distinct, and on 19th of same continued gradually diminishing. Two years after operation there was no appearance of tumour externally, but in consequence of a return in her symptoms a ligature was put round the subclavian (Aug. 2, 1838). From this she recovered, and her symptoms were mitigated. She died Nov. 27, 1838, of pleuritis, having lived two years and three months after ligature of the carotid. Dissection showed the innominata alone to be the seat of disease. The sac, except a channel of the usual size of the innominata, was filled by a dense, organized coagulum. The right carotid was permeable for about a third of an inch from its origin. Opposite the cricoid cartilage there was an interruption to its continuity, where the ligature had been applied. The upper portion of the vessel was impermeable to where the external carotid was given off.

Pulsation in tumour gradually diminished after operation. One year after it was the size of a small nut, and pulsation was scarcely perceptible in it. M. Robert, in his Thèse states, that in June, 1842, the patient continued in a satisfactory state.

After the operation the tumour decreased, and its pulsations were weakened. On dissection the tumour was nearly filled with pretty firm clots of fibrin. No clot was found in the carotid even as high up as the ligature, which was placed one-fourth of an inch below the bifurcation.

Tumour did not diminish after the operation. On dissection the carotid was found obliterated, both above and below the ligature, by a firm clot. The ligature had been placed three-fourths of an inch below the bifurcation.

On tightening the ligature the swelling disappeared. After a short time it began gradually to return, though it did not nearly regain its original size. On 11th the tumour was the size of a walnut. Dissection showed the tumour to fill up the whole of the anterior and middle mediastinum in front of the root of the right lung, extending from the cartilage of the third rib to the top of the sternum. The aneurism commenced at root of innominata, involving nearly the whole of that vessel, and also the transverse portion of the arch of the aorta as far as the left carotid. The first bone of the sternum, end of clavicle, and first rib were denuded of periosteum, and formed part of the outer wall of the sac. Descending aorta was dilated as far as the diaphragm, and had ossified deposits. Left ventricle slightly hypertrophied.

SERIES I.—ANEURISMS.

Mortality.—Of the thirty-eight cases in this series, twenty-two recovered, and sixteen died.

Sex.—Of these thirty-eight cases, twenty-seven were males, and eleven females. Of the eleven females, two had aneurisms following wounds, seven laboured under true aneurisms, and two had tumours in the neck which were mistaken for it.

Right or left side.—Of thirty-three cases in which the affected side is noted, twenty-two were on the right, and eleven on the left side.

Age.—This is mentioned in thirty-four of the cases, of which number there were under 20, 4; between 20 and 30, 7; 30 and 40, 8; 40 and 50, 9; 50 and 60, 3; 60 and 70, 3.

Disease.—Of the thirty-eight operations contained in the series—thirty-three were done for the cure of aneurism—one was for the cure of varicose aneurism, and in four the tumours though supposed to be aneurisms were afterwards discovered not to be such.

Period the ligature separated.—In twenty-one of the cases in which this is noted, the ligature came away: in thirteen, before the twentieth day; in seven, between the twentieth and thirtieth days; and in one on the thirty-third day.

Return of pulsation in the tumour, after the application of the ligature.—In nine of the thirty-eight cases, pulsation was noticed in the tumour after the operation. In one of these, (No. 2.,) pulsation “did not wholly cease” after the application of the ligature, but continued for upwards of two months, the cure afterwards being perfect. In No. 10, pulsation became more faint, but did not entirely cease on tightening the ligature. Two days afterwards it was not perceptible, and the swelling diminished to one-fourth of its original size. In No. 13, the tumour was noticed to pulsate on the fourteenth day after the operation, and continued to do so four or five months. In Nos. 23, 28, and 33, pulsation never entirely left the tumours. In the first of these, aneurisms existed on both sides of the neck. Pulsation did not immediately cease on the application of the ligature, though it did in the course of the following hour; on the succeeding day, however, it recurred feebly, and continued diminishing till the seventeenth day, but never ceased. The patient recovered from the effects of the operation. The second died after repeated hemorrhages at the end of six weeks. The last, (No. 33.,) was a woman aged sixty, affected with aneurism of the internal carotid. The tumour which had existed about five months, and had attained the size of a large walnut, was in the throat in the situation of abscess connected with the tonsil. It presented the diffused aspect of a purulent collection, and a strong and uniformly distending pulsation could be perceived over every part of it. After the artery was tied, pulsation continued in the tumour, but was much less forcible. The patient died in thirty hours. The operator adds, “though

doubts might be entertained as to the cure of the disease, through want of sufficient obstruction in the flow of blood, no apprehension was entertained of danger from the operation, and I feel quite unable to offer any satisfactory explanation of its fatal issue." This case is highly interesting, as presenting an example of aneurism in a very unusual situation, and is accompanied by a drawing which shows very distinctly its position in regard to the artery. In No. 9, pulsation was observed in the tumour four hours after the operation and left it on the sixteenth day. In number 15, pulsation in the tumour continued for a number of weeks—a cure taking place, and in No. 32, slight pulsation returned on the night of the operation, but afterwards entirely disappeared.

Hemorrhage after the operation.—All the cases in which this occurred, after the operation, but two proved fatal. In No. 12, the artery was tied on the 14th of November, and the hemorrhage had place on the 29th of December, and was arrested by firm pressure and low diet. In No. 38, it took place on the evening of the tenth day, to the amount of a pint, and was checked by pressure, but on the next day there was a recurrence of it, which ceased spontaneously.

Bursting of the tumour.—In six of the thirty-eight cases, the tumour suppurated and either burst spontaneously or was laid open. Of these, four died, and two were cured. In No. 5, the opening in the sac took place nearly eight months after the operation, and in No. 9, there was an interval of about four months between these occurrences. In one case, which died, No. 36, the opening was in the pharynx fifteen days after the operation, and on the same day the tumour was laid open. In No. 27, the aneurism had ruptured into the mouth, previous to the operation, yet the patient did well.

Cause of Death.—Of the thirty-eight cases operated upon for aneurisms sixteen died. Of these, two died from inflammation of the sac; one from inflammation of the brain; five, from hemorrhage coming on at periods between the fourth and seventieth days; one, from spasm of the glottis; two, from apoplexy and congestion of the brain; one, from "exhaustion" on the fifth day; and in four, the cause of death is not noted.

Mistakes in Diagnosis.—In seven of the thirty-eight cases in the table, mistakes in diagnosis occurred. In No. 16, the tumour, on dissection, proved to be a fungus hæmatodes. In No. 37, the disease was carcinomatous. In No. 30, the aneurism was supposed to be cured, the patient living nine months after the operation, but on post-mortem examination, it was found to be a tumour surrounding, though in no way connected with the artery. In No. 35, the patient was also looked upon as cured of his aneurism, and died four months afterwards of bronchitis, when the disease was found to be a glandular swelling. In No. 25, the aneurism was mistaken for an abscess, and incised; repeated hemorrhages followed, and the external carotid was secured. This procedure failed to arrest the bleeding and the common carotid was tied. The patient died on the sixth day. In

No. 31, a boy nine years of age, the tumour was carefully examined to ascertain if pulsation existed, "a hint having been given that it might in some way be connected with the carotid," but not the slightest pulsation could be perceived in any part, except in the course of the vessel. Such being the case, a puncture was made in the tumour under the impression that it contained matter. A gush of arterial blood followed, and about four ounces were lost in a few seconds. The wound was closed by hare-lip pins, and the twisted suture, and the bleeding checked. On the following day the carotid was tied close to the origin of the innominate. On the 3d of November, a sudden gush of arterial blood took place from the wound in the neck, the ligature being still firm. This was suppressed by plugging the wound with lint. Hemorrhage recurred six times after this, the last leaving him in a state of perfect collapse, and he died on the 5th. On dissection the proximal end of the vessel was found to be quite open, and there had been no attempt at the formation of a clot. The operator, Mr. Liston, believes that the tumour was originally a scrofulous abscess accompanied with ulceration of the vessel, and consequent effusion of blood into the cyst; this, he thinks, was proved by the position and form of the cyst, (plates of which are given,) the nature of the lining membrane, the absence of lamellated coagula, and the kind of opening in the artery—it being very small, and the three coats being traceable to the margin of it. No. 22, was an aneurism following a wound of the vertebral artery alone, in which the common carotid was tied at the hospital of Naples. The tumour was seated below the mastoid process. The patient died on the ninth day, and the autopsy showed the aneurism to occupy the vertebral artery between the transverse processes of the two first cervical vertebræ. The vertebral artery being very rarely the seat of aneurism, it may be well to notice here a case somewhat similar to that just mentioned, which is recorded by M. Ramaglia of Naples. The patient, aged thirty-nine, received a wound from a sharp-pointed instrument behind the left ear, which resulted in the formation of an aneurismal tumour in that situation. The common carotid was tied for its cure, but finding that this did not arrest pulsation in the tumour, the ligature was removed. A short time after, the patient died, and dissection showed the aneurism to arise from the vertebral artery. (*Velpeau, Méd. Opérat.*, tom. ii. p. 220.)

Another example of aneurism of the vertebral artery is mentioned by Mr. South, in his translation of Chelius's Surgery, as having recently occurred in the Northern Infirmary at Liverpool; the carotid artery could be distinctly traced over the pulsating swelling, of the actual nature of which there were some doubts as to what kind of aneurism it was, or whether only a pulsating tumour. It was decided to tie the common carotid artery. The tumour rapidly increased after the operation, and in about a fortnight the patient died by the bursting of the aneurism into the trachea. On post-mortem examination, an aneurism of the vertebral artery, between

the transverse processes of the fourth and fifth cervical vertebræ, was found.

The diagnosis of aneurismal tumours of the neck, is acknowledged by all to be at times exceedingly difficult. An instance in which enlargement of the thyroid gland, as proved by dissection, was mistaken for an aneurism, has been reported by the late Dr. S. P. Griffiths. Wishing, he observes, "to think the disease was glandular, endeavours were frequently made to draw the tumour out from the artery, but without success, as it was so firmly fixed over the vessel as not to be moved from it, and the pulsation was such as to convey the idea that there was no intervening substance." The propriety of an operation had been suggested, to which objection was made from a belief that the artery below the clavicle was diseased. In the *Dictionnaire des Sciences Médicales*, tom. xviii., the case of a creole with a tumour in the neck is mentioned, which was submitted to the inspection of several celebrated surgeons in America, Paris, and London; all of whom pronounced it to be an aneurism of the carotid artery. It was afterwards ascertained by M. Boyer, that no such disease existed—but simply, an extensive enlargement of the glands of the neck.

Derangement of the Cerebral Functions.—In twelve of the thirty-eight cases, serious symptoms were manifested in the brain after the ligature. The effect of cutting off the supply of blood through one of the carotids is so interesting, and until the late researches of Mr. Chevers, of London,* was looked upon so lightly by practical surgeons, that we shall give these results somewhat in detail. In the first case in which the operation was ever done for the cure of aneurism, No. 1, paralysis of the left arm and leg, came on on the eighth day. Four days afterwards, the palsy of the arm had almost disappeared, and no further report concerning it is made. In No. 4, there was great drowsiness on the third day, and on the following day, the right side was much more feeble than the left. After some days, these symptoms gradually disappeared. In No. 18, the patient became slightly convulsed on the right side, one and a half hours after the operation, and sunk into a state of stupor. Two days afterwards, his left side became paralyzed. In No. 16, it is stated, that "a few hours after the operation, symptoms of inflammation of the brain arose," but were subdued by the antiphlogistic treatment. In No. 37, apoplexy occurred on the morning of the day following the operation, from which the patient partially recovered, and lingered on for nine days after it. In No. 35, slight cerebral disturbance arose the day after the ligature, and on the fourth day there was paralysis of the left side. In No. 17, dimness of vision, and a sense of coldness over the right side of the face, came on immediately after the operation, which gradually disappeared in a few

* The paper of this gentlemen will be found in the London Medical Gazette, vol. i., N. S., 1845.

hours, though for some days, headache, difficulty of deglutition, and heaviness in the right side, were complained of. In No. 20, the patient lost the use of the left eye and was affected with hardness of hearing. In No. 25, there were slight convulsions on the second day after the operation. In No. 9, giddiness with numbness, and trembling of the right arm came on two hours after the operation, the numbness disappeared the day after. In No. 34, hemiplegia followed, (the side is not stated,) which, it is added, may have occurred at the moment of tying the ligature, but was not remarked until an hour or more after the operation, and the patient continued faint and hemiplegic till her death on the fifth day. In No. 26, coma supervened on the night after the operation, and the patient soon after died. Of these twelve cases, seven died.

These cerebral symptoms were noticed at various intervals after the tying of the artery, and in all of them, are attributable either to cutting off the direct supply of blood to the brain, or to disease consequent upon the altered condition of the circulation in that organ. It is impossible to determine what particular state of the vessels of the brain predisposes it to become diseased after obliteration of the carotid. The researches of Mr. Chevers, leads him to think that in most instances the fatal mischief is consequent upon deficient arterial supply, but that in some cases it may arise from increased pressure of blood upon the arteries of the affected hemisphere, in consequence of the supply to the carotid being diverted through the vessels of the circle of Willis.

SERIES II.—WOUNDS, &c.

Of the thirty cases contained in this series, fifteen were cured, and fifteen died.

Period the ligature separated.—In thirteen cases in which this is noted the ligature came away; in one, before the tenth day; in nine, between the tenth and twentieth days; and in three, between the twentieth and thirtieth days.

Hemorrhage after the operation.—In six cases hemorrhage followed at various intervals after the application of the ligature, and of these three died.

Derangement of the cerebral functions.—In eight of the thirty cases in this series, serious symptoms on the side of the brain, either from inflammation or from interruption to its normal circulation occurred, and of these eight, only two recovered. In one of them, No. 16, the operation was followed by troubled vision, which remained imperfect on the right side. In No. 18, immediately after the application of the ligature, the patient became motionless, lay with closed eyes without answering when spoken to, unless the questions were repeated several times. This state was followed by coma and death in twenty-four hours. In No. 6, headache and delirium occurred on the fifth day after the operation, and on the

seventh stupor and death. In No. 14, it is stated that she lay for two or three days subsequent to the operation in a state of insensibility, and then gradually recovered. In No. 26, hemiplegia of the left side of the body and right side of the face was observed three hours after the operation, and the patient died on the ninth day. In No. 2, the man, on the night of the operation, became delirious and had convulsions which were most violent on the left side, and soon afterwards his right side became hemiplegic. In No. 22 hemiplegia of the left side came on on the sixth day. In No. 29, the patient during the operation made violent efforts with his right side, but never moved the left extremities. During the night, the right extremities were frequently convulsed. In the two following days twitchings of the right side and paralysis of the left continued.

In No. 12, it is noted that the patient was epileptic, and that this condition was not removed by cutting off the supply of blood to the brain. In No. 19, the patient during the operation "became relaxed and seemingly fainty, and his voice, which had been previously coarse, fell to a whisper and could not be raised above it." The respiration was not disturbed. The operator attributes the feebleness of the voice to "turning off the supply of blood to the larynx through the upper thyroid artery," though it would seem more probable that in the necessary hurry of this operation, and the obscurity of parts from the flow of blood, that the superior laryngeal nerve had been included in the ligature. In No. 9, the vessel was secured to arrest hemorrhage following the extraction of a tooth, styptics and the actual cautery having been first in vain tried, but the bleeding continued after the vessel was tied.

In No. 26, a mistake occurred in regard to tying the artery which merits notice. On the fifth day after the receipt of the wound in the side of the neck, the surgeon in attendance tied what was supposed to be the primitive carotid; compression, which had before been employed, was continued. Three days after hemorrhage returned as severely as ever, and M. Sedillot, who was then consulted, finding that the ligature had really not been placed around the artery, proceeded to secure it.

A most instructive case, in which an error similar to that just mentioned was made, occurred at the New York Hospital in 1840. The case was one of violent hemorrhage arising from ulcerations towards the middle of the neck, in which it was determined to apply a ligature to the common carotid. An incision was made in the ordinary manner on the inner side of the sterno-mastoid muscle, and in the usual situation of the sheath of the vessels a large mass of fibrine was found adhering to all the tissues in that region and confounding them in such a manner, that it was difficult to distinguish one from another. After careful dissection, what appeared to be the sheath of the vessel was exposed and divided. A cylindrical body of the size and colour of the artery was then brought into view, and a ligature passed under it. Several of the surgeons present, as well as the operator, felt the

vessel under which the ligature was placed and were convinced that it was the carotid artery, although no distinct pulsation could be felt in it; this was attributed to the extreme prostration to which the patient was reduced. The ligature was then tied without any effect in arresting the flow of blood. From this it seemed evident that the subclavian, or one of its branches were wounded, but the patient was so prostrate that it was not deemed safe to attempt any further operation. Firm pressure with the hand was therefore continued. Death occurred early on the following day. Upon post-mortem examination, the ligature was found to embrace only a band of organized lymph, situated immediately anterior to the sheath of the vessels, which were in a perfectly healthy condition. The hemorrhage was found to proceed from the inferior thyroid, which was destroyed by ulceration in one half of its circumference for the space of an inch. (*New York Medical Gazette*, Feb. 9th, 1842.)

SERIES III.—ON EXTIRPATION OF TUMOURS.

In this series, there are eighteen cases in which the common carotid was tied previous to, or at the time of the extirpation of tumours of the neck or jaw. Of these, six died, and one is stated to have been "recovering on the eighth day."

In one of these, the external jugular vein was wounded in exposing the artery, (No. 16.) In No. 15, where the artery of the right side was secured, the patient had, on the evening of the operation, "not exactly paralysis, but great difficulty in moving the left arm and leg." On the seventh day, "incipient coma, loss of sensation and motion in the left arm" is noted, and on the day after sensation and motion in the arm is said to have returned. No further account is furnished. In No. 10, the patient is stated to have been seized with convulsive action of the muscles of the whole body, but chiefly on the left side, on the morning after the operation, and on the succeeding day was suddenly taken with convulsions, soon became comatose and died.

The ligaturing of the carotid, previous to the extirpation of tumours about the neck or face, originated with Mr. Goodlad. Unless there is reason to suppose that the tumour involves the artery itself, it would seem to be an unnecessary step, inasmuch as pressure alone, if confided to a careful assistant, will as effectually guard against the danger from hemorrhage. In determining whether or not it is to be employed, it must be borne in mind that this preliminary measure is in itself a *dangerous* operation, and as has been justly remarked by Mr. Chevers, that "it would be far better for the surgeon to make up his mind to contend with an active hemorrhage, than that he should submit his patient to the chance of fatal hemiplegia, even although he believed that chance to be a remote one." The idea seems still to be entertained by some, that after such a step, the subsequent dissection of the tumour is nearly bloodless. The opinion is

an erroneous one, the anastomoses being so free in the enlarged state of vessels which usually exist in these cases, as at times to pour out blood profusely. In 1827, Mr. Lizars attempted to remove the superior maxilla for a medullary tumour of the antrum. He commenced by tying the common carotid artery of the affected side, but was prevented from completing the operation by hemorrhage, the patient having lost upwards of two pounds of blood in a few seconds. In a case which occurred to Dr. Mott where the carotid was tied immediately before a disarticulation of one-half of the jaw, the hemorrhage was exceedingly profuse, and some fifteen or twenty vessels required to be tied. Where the ligature is applied to the artery, any number of hours, or days, as has been done, before the removal of the tumour, the procedure cannot, we think, be justified. According to Mott and Stedman, another advantage besides that of arresting hemorrhage is to be derived from it, viz., that of being an important means of preventing inflammation in the wound. Facts might be adduced to show this view to be erroneous—the inflammation being no greater where the artery is not secured, than where it is tied.

The difficulties and immediate dangers of exposing the carotid vessel too, in cases of large tumours, are not to be set down lightly. Roux, as dexterous an operator as any of his age, was fifteen minutes in securing the artery. Goodlad found it a very difficult matter to accomplish, in consequence of the nearness of the tumour. In a case operated upon by Dr. Mott, notwithstanding the patient was recumbent, and very little blood was lost, she became pale and almost pulseless during and immediately after the tying of the carotid, and her mind became perturbed to so great a degree that cordials were administered and she was put to bed faint and exhausted, and the removal of the tumour deferred till the following day. In an operation, mentioned by Dr. Warren, of a similar kind, a vein was wounded in the search for the carotid, which permitted the entrance of air into the circulation, and gave rise to alarming symptoms, making it necessary to suspend the operation, which was performed a week afterwards *without* tying the vessel. As a preliminary step to the operations we are now considering, the general experience of surgeons of the present day is decidedly against the proceeding. Mr. Liston, whose success in the management of tumours of the mouth and jaws, face and neck, is well known to every surgeon, speaks on this point very emphatically. "I have never," says he, "found occasion to tie the carotid previous to, or during the operations for their removal, and I have never regretted omitting this supposed precautionary measure." The latest writer I have seen upon the subject, Mr. Solly, gives it as his opinion, that if a ligature on the carotid is of advantage in any cases it is only where the tumour is of large size, and of a fungoid character, "in fact, that it is only necessary in those cases in which it is not right to operate at all."

SERIES IV.—CEREBRAL AFFECTIONS.

The idea of curing epilepsy by tying the carotid artery seems to have been founded upon the false principle, that this operation would diminish the amount of blood sent to the head, a view, however, which is manifestly incorrect, for though the supply sent to the brain by one of these vessels should be cut off, it passes in increased amount by the artery of the opposite side and the vertebrals. But the notion that epilepsy is essentially dependent on vascular excitement, it need hardly now be said, is in itself an erroneous one. Any irritation, in any part of the body, and either corporeal or mental, may give rise to it. Vascular excitement may doubtless occasionally be its exciting cause, though even where this is the case any benefit resulting from obstructing the flow of blood through the carotid is not likely, for the reason before mentioned, to prove permanent. As early as 1822, ligature of the carotid was done in an epileptic patient with wounded throat, by Dr. Boileau, and for a considerable time he remained without an attack, though ultimately a recurrence of them had taken place. In Dr. Becton's case, No. 2 of the table, the patient experienced two fits during the first ten days that elapsed after the operation, but after this he returned to his former intemperate habits and had frequent attacks. No. 4, who was operated upon in February 1831, is stated by Mr. Preston to have continued well and free from epileptic attacks up to January 1833. In No. 5, where hemiplegia of the right side of twenty days' standing existed with the epilepsy, the right carotid was tied August 23d, 1831, and he was discharged from the hospital September 26th, having had several epileptic attacks, though of a milder kind than before the operation. In November he was re-admitted, having suffered much from epilepsy and headache after his discharge. On the fourteenth of that month, the *left* common carotid was tied, and he was discharged December 8th, his epileptic attacks continuing. On the 14th of February, 1832, he was again re-admitted in a state of insensibility, and had been speechless for fourteen days. Under the use of purgatives, a seton, leeches, &c., these symptoms gradually disappeared, and in January 1833 was still living, though three months before that date he had suffered from an attack of paralysis agitans. In an appendix to his second paper, Mr. Preston states, that in one case of epilepsy this operation "proved entirely ineffectual." The patient had suffered from the disease for eight years. *Both* common carotids were tied with an interval of a month, and the day following each operation he had an epileptic fit not differing from those he had previously.

In one of the other three cases of this series (No. 1), the artery was tied for the cure of a neuralgic affection, the operator being led to perform it from noticing that pressure, which was accidentally made on the artery, gave some relief; the benefit derived from it was only momentary. In Nos. 3 and 6 it was done with a view of curing paraly-

sis. In the first of these, there was loss of power and sensation in the left arm and left lower extremity, and at the period of his discharge from the hospital, (twenty-first day after the operation,) the patient was able to walk about, the arm remaining paralytic. In January 1833, he continued alive, and had regained in great part the use of his arm. In the second, No. 6, partial loss of motion existed in the left arm and leg, the patient being unable to walk without support. There was also complete loss of vision in the right eye, and that of the left was impaired. The operation was done on the right side on the 2d of September, and on the 27th, it is stated that he walked five miles, the morning after which, the sight of the left eye was less perfect and his head hot. He was slightly salivated, blistered between the shoulders and took iodine, but without benefit. The diminution of the vision being now attributed to a return of the affection of the brain, for which the first operation had been done, the *left* common carotid was tied on the 10th of October. On the 11th of November he was discharged from the hospital, the vision remaining imperfect, though in other respects he was well.

The results of these cases we have thought it right, as matter of history, to give somewhat in detail. It need hardly be observed that quite as much if not more benefit as was produced in these cases, is daily seen to follow any well directed treatment in cases of epilepsy and paralysis, and this without a resort to means which endanger life, indeed by hygienic treatment alone.

SERIES V.—ERECTILE TUMOURS.—TUMOURS OF DIPLOE, JAW, MAXILLARY SINUS AND NECK.

In this table there are forty-two cases in which the carotid has been tied with the view of arresting the flow of blood to the tumour, and thus curing or arresting the growth of erectile tumours situated upon the head or face, or of firm tumours of the jaw, maxillary sinus, or neck. Of these forty-two cases, thirty-one were for the cure of erectile tumours, or arterial varices seated upon the head or face, of which number eighteen were cured, eight died, and five recovered from the effects of the operation without being cured. One of these latter, No. 27, was operated upon by the ancient method five years after ligature of the carotid and cured; another, No. 24, is stated at the date of the report, two months after the operation, to have the tumour flattened and reduced to one-third of its former volume; in a third, No. 4, all pulsation in the arteries ceased, though the erectile tissue continued unchanged, and pressure was resorted to in its after treatment; in the fourth, No. 42, galvano-puncture was tried after the ligature of the vessel, but without benefit; and the fifth is the case of Velpeau, which is detailed in another place.

Of the eleven cases in which it was done to cure or arrest the growth of other tumours, five died, four recovered from it but were not cured, and

two are stated to have been cured, though in one of them, No. 5, part of the tumour was removed by the knife after the operation, and caustics ultimately were made use of to destroy it.

The treatment of purely erectile tumours by cutting off the supply of blood to them, by the application of a ligature to the main artery, originated with Pelletan, and has often, as will be seen by the above results, proved successful in the carotid—more frequently, we may add, than in other situations. In some instances, though it has failed to make a perfect cure, yet it seems to have so diminished or retarded the progress of the disease, as to have allowed a resort to excision, the ligature, or pressure, which without it, would have been either more dangerous or altogether inapplicable.

The facts recorded show that ligature of the carotid to diminish *non-erectile* growths of the face, jaws, or neck has proved altogether ineffectual where it has been alone depended upon, and cannot at this day be countenanced by sound surgery.

A summary of the whole number of cases contained in this series furnishes the following results.

Mortality.—Of the forty-two cases, twenty were cured, thirteen died, and nine recovered from the operation though not cured by it.

Right or left side.—In thirty-nine of the cases in which the side is noted, nineteen were on the right side and twenty on the left.

Age.—This is given in thirty-four of the cases, of which number there were under 20, 16; between 20 and 30, 11; 30 and 40, 4; 40 and 50, 2; æt. 66, 1.

Period the ligature separated.—In twenty-three of these cases in which it is noted the ligature separated; in three, before the tenth day; in eleven, between the tenth and twentieth days; in six, between the twentieth and thirtieth days; and in three, above the thirtieth day.

Return of pulsation in the tumour after the application of the ligature.—In ten of the cases of erectile tumours, more or less thrill of pulsation was noticed in the tumours after the application of the ligature. In six of these cases, the disease was situated in the orbit, and in the other four, on the face or head. The case of M. Velpeau (No. 35) is so rare and interesting a one, that I annex some of the details of it. The patient was affected with tumours in both orbits, offering all the signs characteristic of erectile tissue, and that on the right side was large and projecting. Compression of the right primitive carotid arrested completely the pulsation and thrill in the tumour of the left orbit, and incompletely in that of the right, while pressure on the left carotid put a stop completely to all pulsation in the tumour of the right orbit, and but incompletely in that of the left. After the right artery was ligatured the tumour of the left side ceased to pulsate; the tumour of the right side shrunk, but pulsation could still be perceived in it. At the end of ten days, all pulsation had ceased, and the patient appeared to be cured. He remained, however, in the

hospital for six weeks, and during this interval it became evident that the cure was not perfect, pulsation having reappeared by degrees in the tumour of the right side. In February 1840 (about six months after the operation) he remained in nearly the same state as he was six weeks after it, and at that date, compression of the carotid of the left side, arrested both the pulsation and thrill in the tumour of the right orbit. Ligature of the last named artery was at this period proposed, but was refused by the patient.

Hemorrhage after the operation.—This occurred in six cases, four of which terminated fatally. In No. 6, bleeding from the wound in the neck took place on the twenty-third day, was repeated several times and ceased spontaneously; in No. 2, hemorrhage from the lower part of the wound occurred and also ceased spontaneously.

Cause of death.—Of the forty-two cases in this series, thirteen died. Of these, one died from ulceration of the tumour; four from hemorrhage; one, from convulsions; one, from inflammation of the brain; one, from phlebitis of the internal jugular; one, from lock-jaw; one, from inflammation of the chest; two, from long continued constitutional disturbance occasioned by disease; and one from apoplexy.

Derangement of the cerebral functions.—In eight of the forty-two cases, very serious symptoms of affection of the brain were manifested after the ligature of the vessel. In No. 4, a sense of numbness in the left thoracic member came on the evening of the operation which disappeared on the second day. In No. 10, some fever with delirium and paralysis of the left side of the face and hand appeared on the third day.* In No. 17, convulsions and paralysis of the right arm came on the sixth day, after recovery from which, at the end of three months, her intellect remained enfeebled; the disease for which the operation was done being but little changed. In No. 18, vision of the left eye became seriously affected on the eleventh day after the operation, and the patient had some degree of deafness and delirium; on the eighteenth day the eyeball was protruded and sloughed. In No. 26, complete hemiplegia followed the operation.† In No. 30, the woman had paralysis of the left side on the second day after the operation. In No. 32, aged fifteen months, the child was attacked suddenly with convulsions and hemiplegia of the right side about a week before the complete healing of the wound and forty-nine days subsequent to the operation. In No. 38, paralysis of the left side came on the day after the vessel was tied.‡

* In this case it is noted that the internal jugular vein was included in the ligature.

† The internal carotid was tied in this case as well as the common trunk.

‡ Another case is quoted without details in the *Gazette Médicale* for 1839, from *Rust's Magazin*, where the common carotid was tied by Dohlhoff to arrest the growth of a tumour of the palate; paralysis of the side opposite to that in which the operation was practised took place a week after it, and was followed by death on the twenty-sixth day.

SERIES VI.—BRASDOR'S OPERATION.

Upon fifteen cases of aneurisms of the lower part of the neck, in which the carotid has been ligatured between the aneurismal tumours and the capillaries, four appear to have been cured, (Nos. 1, 4, 5, and 12;) six recovered from the operation and appear to have had some relief of symptoms after it; four died; and in one, in which the artery probably was not really tied, there was no improvement. Nine of these fifteen operations, were done for aneurisms, or cases supposed to be such, of the *arteria innominata*; of which, five recovered and four died.

Derangement of the cerebral functions.—In two of these fifteen cases derangement of the cerebral functions followed the ligature of the carotid. In No. 5, where the right artery was tied, the face and whole right side of the body was partially paralyzed, which paralysis was only discovered when the patient first left his bed, three weeks after the operation. In No. 15, where the right carotid also was tied, the patient complained immediately on tightening the ligature of severe pain in the side of the head; the pupil of the opposite eye became slightly dilated, he felt bewildered and confused, and could with difficulty be induced to remain quiet. On the day of his death, the left pupil was largely dilated. He was sensible to the last.*

Difficulties of diagnosis.—It is not intended in this place to dwell upon the difficulty of diagnosis which must often exist in aneurisms about the root of the neck. We shall here only notice that in three of the cases in our table where the root of the carotid or the *innominata* was supposed to be the seat of the tumour, it was found actually to have arisen from the aorta itself. Velpeau, in his *Médecine Opératoire*, mentions two other cases in which the carotid was tied where similar mistakes in diagnosis occurred. One of these was observed in the civil hospital of Amsterdam, in a man affected with an aneurismal tumour projecting above the sternum. M. Tillanus believing the left carotid to be the seat of the disease, tied that vessel a little beyond the tumour. The patient recovered from the operation, but died suddenly five months afterwards, when the tumour was seen to arise from the cross of the aorta and to be completely filled with a white clot. The parts are shown in the pathological collection of the hospital. In the other case, the aneurism, which appeared to be on the point of bursting, showed itself as the preceding one just above the sternum. Looking upon it as an aneurism of the carotid, M. Rigen placed a ligature above the tumour on the 21st of February, 1829. After the operation the tumour diminished considerably in size, and the sufferings of the patient became

* The *Gazette Médicale* for 1839, mentions that in an operation by the method of Brasdor, done for the cure of an aneurism of the *innominata* by Dahlhoff, death followed in a few days, and was preceded by symptoms of paralysis of the side opposite to that on which the artery was tied.

less. On the 13th of June following, he died with symptoms of asthma. The autopsy showed the aneurism to have its origin in the arch of the aorta between the left carotid and the innominate, and was filled up as in the case of Tillanus by coagula.

LIGATURE TO BOTH CAROTIDS.—In a few instances, the carotids of both sides have been ligatured either simultaneously, or with varying intervals of time between the operations. Two such cases have already been noticed where the procedure was followed by Mr. Preston, and we shall here mention the other recorded cases in which it has been done. About the year 1823, Dr. Macgill, of Maryland, tied both carotids in the case of a female affected with fungous tumours of both orbits. Vision was destroyed, and the eyes presented the appearance of a confused mass protruding beyond the sockets. Several months after the operation, she is said to have been doing well, and the tumours subsiding. In a case of aneurism by anastomosis of the scalp, Dr. Mussey tied the left primitive carotid, September 20th, 1827, and on the twelfth day after, secured that of the right side. These operations failed to cure the disease, though they had the effect of reducing the tumour apparently to about one-third of its original volume. It was subsequently, in consequence of its again enlarging and exhibiting a pulsatory movement, removed by excision about three weeks after the second operation. In this operation, which occupied more than an hour, notwithstanding that not more than an inch and a half of the scalp was divided at a time, and that immediately upon the division, firm compression was made upon each lip of the incision, while the vessels were secured by ligature, yet blood to the amount of nearly two quarts was lost, and the application of more than forty ligatures was required. The patient did well, and ten years after it continued to enjoy good health, though occasionally, he had symptoms of cerebral plethora. Langenbeck, in a case of profuse hemorrhage, coming on eight days after the application of a ligature to the superior thyroid for the cure of bronchocele, ligatured both carotids. The patient died on the following day. In a child four and a half years of age, Muller tied one primitive carotid, September 13th, 1831, for the cure of an erectile tumour, and on the 28th of January, 1832, secured the other. The operation was successful. Kuhl of Leipsic, in the case of a man aged 53, affected with an aneurismal tumour on the occiput, tied the left carotid on the 24th of May, 1834, and on the seventy-second day after, in consequence of profuse hemorrhage from the scalp, took up that of the right side. The patient was cured, though he had after hemorrhages from the tumour which suppurated. During the first of these operations, the patient was seized with convulsions, and faintings, and was removed to his bed in a state of insensibility; slight convulsions also occurred during the performance of the second operation. Dr. Mott ligatured both carotids with an interval of

fifteen minutes, for disease of the parotid. Coma supervened, and the patient survived only a few hours. Dr. Ellis, of Michigan, in 1844, tied both of these vessels, with an interval of four and a half days, in a case of secondary hemorrhage, following a gun-shot wound, and cured his patient. Dr. J. M. Warren, in a case of erectile tumour affecting the mouth, face, and neck, tied the left primitive carotid, October 5th, 1845, and on the 7th of November following, ligatured that of the right side. After this second operation, the tumour of the lip diminished one-half, and the fulness of the face and neck, and size of the tongue became less. Finding that the disease did not wholly disappear, it was determined on the 26th of November, to remove the diseased portion of the lower lip "not less than two inches in length, at its free edge," by a triangular incision; but previously to this, in order to avoid hemorrhage, a cataract needle was plunged into the vascular tissue on the left side, and carried in different directions so as to break up and destroy its organization. Three days afterwards, a similar operation was repeated on the right side, and at the time the excision was made, strong compression was exercised on each side of the lip by means of two steel forceps prepared for the purpose, so as completely to intercept the course of blood into it. On the 12th of December the patient returned home well.

ARTERIA INNOMINATA.—The practicability of securing this vessel was suggested by Mr. Burns, in his anatomy of the head and neck, though, as he acknowledges, "without any sanguine expectations of success." It was first put in practice by Dr. Mott, in 1818, in a patient affected with subclavian aneurism, aged 57. The ligature, which was applied about half an inch below the bifurcation of the innominata, separated on the fourteenth day. On the twenty-third day, he had hemorrhage to such an extent, as to threaten instant death; this was arrested for the time by dry lint, and a compress, but after several recurrences of it he died on the twenty-sixth day. (*Med. and Surg. Register*, vol. i.) In 1822, Graefe tied the artery in a similar case. The ligature was applied about an inch above the arch of the aorta, and came away on the fourteenth day. After repeated bleedings, the patient died on the sixty-seventh day. Dr. Hall, of Baltimore, performed the operation, for a third time in 1830. In attempting to isolate the artery, which was in a diseased condition, its coats gave way, and a profuse hemorrhage occurred. An attempt was then made to pass the ligature by means of a needle, but the bleeding continuing, the wound was plugged up, and the patient put to bed. The patient survived until the fifth day. (*Baltimore Med. and Surg. Journ.*, vol. i.) Dupuytren states that a fourth operation was done at Paris, and that the patient also died of hemorrhage. (*Leçons Orales*, tom. iv., p. 611.) A fifth operation was accomplished by Mr. Norman, of Bath, in 1824, and was followed by

death. (*Fergusson's Surgery*, p. 429, Philadelphia, 1845.) In 1837, Mr. Bland operated on a sixth case, in a patient aged 31. On the seventeenth and eighteenth days, hemorrhage occurred, and on the evening of the latter day he died. The ligature was found to have encircled the artery close to its division into subclavian and carotid. (*Lancet*, 1837.) A seventh operation of this kind, was by Mr. Lizars, in 1837. The ligature came away on the seventeenth day. Several hemorrhages occurred after the nineteenth day, and death followed on the twenty-first day. Twenty ounces of coagulated blood were found on the right side of the chest. (*Lancet*, 1837.) An eighth instance of the same operation is given by M. Hutin. In this case, it was done to restrain hemorrhage from the axilla, nine days after deligation of the subclavian outside of the scaleni, which was ineffectual—twelve hours after its performance the patient died. (*Gazette Médicale*, 1842.) A ninth instance is mentioned by Chelius, which was operated upon by Arendt, where death, as in all the previous cases, closed the scene on the eighth day. (*System of Surgery*, Trans. by South.)

The uniform want of success that has followed the application of a ligature to the arteria innominata, shows that the impetus of the blood has a great share in disturbing the process set up by nature after the ligature; to avoid this Mr. Quain has proposed a modification of the operation, viz., the securing of the carotid and subclavian arteries, immediately as they arise from the innominata, it being supposed that by this means the greater length of the artery from the arch of the aorta to the point of ligature, would allow of a firmer coagulum to form. This modification was put in practice by Mr. Liston in 1838, in a case of subclavian aneurism, situated immediately beyond the scalenus muscle. On the eleventh day after the operation hemorrhage took place, and the patient expired on the thirteenth day. On dissection, it was found that a clot had formed in the innominata, but none in the subclavian. (*Lancet*, 1838.) Another case in which both vessels were included in one ligature, just at their origin, occurred to M. Kuhl of Leipsic, in 1836. The patient, aged 43, was affected with a cancerous tumour in the neck, and the surgeon, at the time of the operation, believed that he had tied the carotid alone. Death followed on the third day. Upon dissection, the right carotid and subclavian arteries were found tied together at three lines above their origin from the innominata, and their canals were in part obstructed. (Velpeau, *Méd. Opératoire*, tom. ii.)

It may, perhaps, be well here to remark, that three cases are recorded in which operations for securing the innominata, have been actually begun and finally abandoned. Mr. Porter, in a case of aneurism, cut down upon this vessel, with a view of securing it, but finding it to be in such a condition as not to be advisable for a ligature, he prudently closed the wound. (*Fergusson's Surgery*, p. 430.)

Dr. A. C. Post has given a somewhat similar case which occurred at the New York Hospital. The patient, aged 63, was affected with subclavian aneurism, and an explorative operation was performed "to determine the condition of the subclavian and innominata, with the intention, if the arteries should be healthy, to apply a ligature to the subclavian and carotid near their origin." The innominata, carotid and subclavian were exposed, but the former was so much enlarged that it was deemed inexpedient to apply a ligature to it or to its branches, so that the wound was closed, and the patient sent back to his bed. This was done October 26th, 1839, and he died exhausted by his sufferings, January 19th, 1840. (*New York Journal of Medicine*, No. 4.) The third case of this kind is that of Mr. Key, who commenced an operation upon a young woman affected with aneurism of the right subclavian, with the view either of passing a ligature around the innominata, or of tying both the subclavian and carotid near their common origin, as the state of the parts when disclosed by the knife might render most advisable. After exposing the arteria innominata, it was found impossible to surround that vessel in consequence of a tumour connected with it, and the operation, which had lasted one hour, was abandoned. The patient died on the twenty-third day after it.

Should the unfortunate results of all these cases prevent a resort to the operation of deligation of the brachio-cephalic trunk in future? We think but one answer can be returned to this query; and are happy to find that the author of the most celebrated of our modern treatises on Operative Surgery, Velpeau, has already formally proscribed it.

ART. II.—*On the Endemic Gastro-follicular Enteritis, or "Summer Complaint" of children, as it prevails in the United States.* By EDWARD HALLOWELL, M. D., Fellow of the College of Physicians of Philadelphia, Member of the Academy of Natural Sciences, &c.

CHOLERA INFANTUM, or "the summer complaint" of children, has been considered peculiar to the United States. Billard, in his work on the diseases of infants, alludes to its occasional existence in Paris. In the United States it prevails to a great extent, and the mortality from it is extreme. It occurs in all our large cities, carrying off several thousand children annually; it commences in the Southern States in May, and in the Middle and Western about the beginning or middle of June, and continues until near October, the greater number of cases being observed in July

and August. It is found chiefly in the lanes and alleys of our large cities among the poorer classes of society, but those in the higher ranks are by no means exempt from its attacks. It is stated by Dr. Condie, that during a period of fifteen years from 1825 to 1839 inclusive, 3352 infants perished of this disease in Philadelphia, being almost ten per cent. of the whole number of infants under five years who died during that period. In St. Louis, Missouri, during the years 1841, 1842, and 1843, 238 children died of it.* In 1823, 253 died of the same complaint in Baltimore. The average number of deaths annually in Philadelphia is about 200. The disease is confined almost exclusively to children between four and twenty months of age; cases, however occur as early as the age of two months, and at as late a period as three or five years.†

Causes of the disease.—Cholera infantum is considered to be dependent for its production upon a heated, confined, and impure atmosphere, acting “directly upon the skin, and indirectly upon the mucous surface, at a period when the latter is already strongly disposed to the disease from the effects of dentition, and from the increased development and activity of the muciparous follicles which takes place at that period.” The circumstances of its origin, however, are involved in doubt, and can only be determined by future and more correct observation. The exciting causes are stated by Dr. Dewees to be improprieties in diet and clothing. He observes also, that it is very often aggravated by worms, but such a complication has not come under our notice.

General description of the disease.—Cholera Infantum may be divided into three stages, based upon its anatomical characters. In their description we shall be guided chiefly by the results of our own observations.

Symptoms of the first stage.—This usually commences with diarrhœa, succeeded by vomiting, or with vomiting and purging; these symptoms are soon followed by fever of a remittent type with evening exacerbations; the pulse is small, quick, and frequent, occasionally full, and sometimes tense; the brain is often affected sympathetically; this condition is manifested by a tendency to delirium; the eyes have a fierce and wild expression, and the face is flushed; the stools in this stage vary much in consistence; at times they are thin and watery, but often pasty or mush-like; their colour differs also greatly in the course of the day, and from one day to another;

* *American Journal of Medical Sciences*, for January 1845, p. 245. Mortality among children in St. Louis, by Victor S. Fourceaud.

† “I shall never forget the 10th, 12th, and 13th of July, 1841, when the temperature ranged every day between 80° at sunrise, 100° at 3 P. M., and 85 or 86° at 10 P. M.; wind southwest. Sky nearly clear, barometer lower than at any previous period during the month; on the 14th at 4 A. M., a thunder storm changed the scene. In three days dozens of children died every twenty-four hours; the disease was more frequent, more rapid, and more fatal than I have seen it since.”—*Letter from Dr. Engleman, St. Louis*, May 15th, 1845.

in a number of instances they presented the appearance of chopped egg, upon which boiling water had been poured; occasionally they consisted almost entirely of mucus. The period at which the vomiting is observed varies; it occurs usually on the second, but often as late as the fourth or fifth day; in some instances there is no vomiting throughout the course of the disease; in one case it did not make its appearance until a few days before death; the matter vomited consisted of the contents of the stomach, which were returned almost immediately after their entrance into it; these were more or less mixed with mucus; in infants at the breast the milk was returned in a curdled state, having an acid smell; in one instance it had the appearance of coffee grounds; the vomiting occurred for the most part three or four times a day, and sometimes oftener.

Temperature of surface.—The skin was occasionally moist, more frequently dry, warmer upon the head and abdomen; the latter is mostly warmer than the rest of the body, and often decidedly hot; the temperature of the extremities is natural, or more generally cool; occasionally it is warm; sometimes the lower extremities are cool while the upper retain their usual heat. The *respiration*, except in those cases complicated with other diseases, as whooping-cough or measles, was free, the number of respirations in the course of the minute amounting to 20, 24, 28, 29, 30, 33, 36, 40, 44, 48, 53, 55, 56, 60, 64, 66. When over 30 the respiration was more or less interrupted. The *tongue* in this stage was observed to be moist, but was often red at its tip and edges, and coated at its base with a yellowish or brownish yellow fur.

The *countenance* in the early stage, except when the attack was violent, was good, the eyes being bright and animated; occasionally the child would fall into a sleep from which it was easily roused. There was usually a considerable degree of irritability and restlessness, the little sufferer being pacified with difficulty. The sleep was often disturbed. The abdomen was occasionally tense and tumid, and somewhat painful on pressure; the thirst was often intense; it now and then happened, however, that drink was refused.

Anatomical characters.—These consist in an undue development of the follicles both of the stomach and intestines, or of one of those organs without inflammation of the mucous membrane. Children rarely die of cholera in the early stage; opportunities, therefore, seldom occur of observing the morbid appearances. M. Billard, who had ample opportunities, for the study of the diseases of children at the Hôpital des Enfants Trouvés of Paris, states that he had seen isolated follicles and follicular plexuses of the intestinal tube in considerable numbers and developed without being inflamed in twelve infants; three were aged from eight days to three weeks, two aged two months, the remaining seven were from nine months to one year; the symptoms of the cases he has published correspond so closely with those of cholera infantum, that, to use the language of Dr. Horner, it is evident had they occurred in this

country, they would have been named, and in fact are cases, of cholera infantum. M. Billard states, that most of these children had arrived at the period of dentition, so that there appeared to be a remarkable coincidence between the appearance of the teeth, and that of the organic development of the follicular apparatus of the intestines, the follicles performing an active part in the process of digestion by furnishing the surface of these organs with a fluid which in all probability assists in the elaboration of food. Dogs, he observes, and other carnivorous animals remarkable for their digestive powers, possess this apparatus in a high degree of development. In a lioness which died in this city some years ago, and of which I had the opportunity of making a post-mortem examination, the isolated follicles of the intestines were one-fifth of an inch in diameter.

The follicles are sometimes found to exist in great numbers from the first period of life, but in general they are not very numerously developed, except at the period above mentioned, or at a still more advanced age. (Billard.) Rœderer and Wagler, in their work *De Morbo Mucoso*, in which they describe the symptoms and anatomical characters of a gastro-follicular enteritis that prevailed in Gottingen in 1760 and 1761, give very beautiful and accurate drawings of the mucous follicles in a state of abnormal development.

The muciparous glands of the mucous membrane are, it is known, of two kinds, the isolated and the agminated. The isolated follicles are found both in the stomach and intestines, but are much more abundant and less uniformly developed in the former than in the latter; the agminated follicles or glands of Peyer occupy the free border of the intestine; these are rarely affected in cholera infantum. The isolated follicles are found less abundantly in the jejunum, than in the other portions of the small intestine. They are usually about the size of a pin's head, and have not inaptly been compared by Dr. Horner to grains of sand sprinkled over the surface of the intestine. They are elevated above the surrounding surface of the membrane, and have each in their centre a small grayish point. They consist simply of a duplicature of the mucous membrane, and are readily effaced by passing the handle of the scalpel over them with some force; on cutting them open they are found to contain a small quantity of fluid. These glands receive each, according to Lieberkuhn, Meckel, and Beclard, an artery, a vein, and a nerve. They occupy both the summit and the interstices of the valvulæ conniventes, and are found disseminated over every part of the intestine both upon its free and attached surface. (See case of Charles Morand in Billard, *Maladies des Enfants*, and of Marie Boulefray in the work of the same author, entitled "*De la Membrane Muqueuse gastro-intestinale dans l'état sain, et dans l'état inflammatoire, ou recherches d'anatomie pathologique sur ses divers aspects, sains et morbids.*" Paris, 1825.)

Treatment.—We have thought it proper to intercalate with our own,

the opinions of older and more experienced members of the profession, more especially those of Dr. Chapman, Professor of Practice in the University of Pennsylvania. His acute perception of *symptoms*, appears to have impressed him more fully than most others with the importance of depletory measures in the treatment of this disease. *Preventive means.* In the beginning of June examine the condition of the gums of the child, and if swollen, lance them and send it into the country. A part of the country should be chosen which is elevated, where the air is pure and dry, and where there are no large streams nor stagnant water. Chestnut Hill, in the vicinity of Philadelphia, offers superior advantages in this respect. If it be impossible to remove the child to the country, especially if the apartments of its dwelling be not large and freely ventilated, let it be carried into the open squares of the city, or taken frequently across the Delaware in the afternoon. The sleeping apartments of children should be large and well aired. They should sleep upon a mattress or blanket folded upon the floor of the room or crib, and the covering should be light; they should be immersed in a cold bath at least once a day, or be freely sponged with cold water; the mortality among children in Philadelphia is said to have greatly diminished since the introduction of the Schuylkill water; the child should be confined to the mother's breast, care being taken not to overload the stomach; indeed, it often happens that the breast is given to the child when it requires only drink; the stomach then becomes distended and vomiting often ensues. Attention during the first year should be paid to the diet of the mother; she should avoid articles of a flatulent or indigestible character. Dr. Parrish recommends as a preventive means, when a predisposition to cholera is suspected, the occasional use of nutritious animal fluids; the sucking of small pieces of salt meat, as ham or dried beef, he observes, will sometimes be found productive of advantage. With the same view of giving tone to the stomach, he recommends that aromatics, as ginger tea, be used habitually during the summer, in those cases in which there is strong reason to apprehend the occurrence of cholera. This treatment may possibly be applicable under certain circumstances, as in the case recorded by him, but as a general rule we are not disposed to recommend it. Indeed, he himself observes, that it is applicable in all its details only to those in whom there is every reason to apprehend that the only alternative is between almost certain death and the most careful prophylactic treatment.

Treatment of the first stage.—We have seen that the first stage consists chiefly in an abnormal development of the mucous follicles of the stomach and intestines. This, as observed by M. Billard, is not, properly speaking, a true inflammation, being rather an intermediate stage between the normal state, and the state of inflammation. The follicles are simply in an excited condition, induced, as there is reason to suppose, by the powerful influence of heat combined with malaria, acting upon the nerv-

ous system. The object of treatment, therefore, is to subdue this excited condition, and to restore the healthy state of the skin, with which, and the mucous lining of the alimentary canal, there is a powerful sympathy. The functions of the liver, it is probable, are more or less impaired, but of this we have no direct evidence. If the child be not weaned, it should be confined to the mother's breast, care being taken to avoid overloading the stomach, thus adding to the irritation which already exists. If weaned, it should be confined to milk and water, rice, barley, gum, or toast water. The infusion of the benne leaf (*Sesamum orientale*), is also employed in this city, and is a useful remedy. The gums should be carefully examined and lanced if swollen. The most important point of treatment, however, is early removal to the pure air of the country. This should be done as soon as the disease has declared itself. Dr. George B. Wood, Professor of Materia Medica and Pharmacy in the University of Pennsylvania, states, that during the whole period of his practice, (nearly thirty years,) but one case occurred to him, so far as he can recollect, of a fatal termination of this disease, when the child had been sent into the country in the early stage of it. (*Practice of Medicine*, vol. i. p. 673.)

Blisters behind the ears have been highly recommended at this period of the disease, and we believe the practice is attended with decided advantage. Dr. Parrish was the first to suggest them. They should be applied immediately. The advantage arising from the early application of blisters behind the ears is confirmed by the late Dr. Eberle, a distinguished practitioner of this city, favourably known by his writings on the management of children. He observes, "during the last seven years, I have treated but few cases in which I have not at once applied blisters behind the ears, and I may confidently affirm, that since I have adopted this practice, I have been much more successful in the management of the disease than formerly. Their good effects arise, no doubt, from the counter-irritation they produce." The warm-bath should be administered every night and morning, and the child on coming out be gently rubbed with a piece of soft flannel; should there be much cutaneous sensibility, a portion of salt and mustard may be added to it. With a view of allaying the vomiting, various remedies have been employed. Injections of salt and water have been recommended by Dr. Dewees. Lime-water and milk, and the neutral mixture may be used for this purpose. Dr. Chapman states, that he has found the irritability of the stomach most effectually allayed by lemonade in doses of a teaspoonful, frequently repeated. It should be made pretty sour. Great advantage may also be derived from the frequent use of Seltzer or soda water. Dr. Parrish was in the habit of recommending it to be put up in 3ss phials, the contents of one of which to be given at a draught. The soda powders may also be employed. Chicken water was also directed with the same view. Stimulants, as strong coffee, sulphuric ether, turpentine, &c., are objectionable. Dr. Condie states, that when the irri-

tability of the stomach has been excessive, he has rarely failed in allaying it by the administration of the acetate of lead, in solution according to the following formula. R.—Aq. puræ $\mathfrak{z}\text{j}$; acet. plumb. grs. v; acid acet. impur. $\mathfrak{m}\text{v}$; sacch. alb. pur. $\mathfrak{z}\text{ij}$. Sig. A teaspoonful may be given every hour or two until the vomiting be suspended. We have been in the habit of directing the blue mass mixed up with gum arabic, with a view of overcoming the irritable condition of the stomach, and usually with success, or small doses of calomel, ($\frac{1}{12}$ of a grain every two or three hours, either alone or in combination with a very minute quantity of opium, $\frac{1}{16}$, $\frac{1}{20}$, $\frac{1}{30}$, $\frac{1}{40}$ th of a grain.) The blue mass may be given as follows: R.—Mass. ex hydrarg. grs. iv; g. acaciæ pulv.; sacch. alb., $\mathfrak{a}\mathfrak{a}$ $\mathfrak{z}\text{ss}$; aq. $\mathfrak{z}\text{iss}$. M. Sig. A teaspoonful every three hours.

If the vomiting be obstinate, a Cayenne poultice or small blister may be applied to the epigastrium. Should the disease continue, we next have recourse to small doses of calomel and ipecacuanha in doses from $\frac{1}{12}$ to $\frac{1}{6}$ of a grain of the former, and from $\frac{1}{4}$ to $\frac{1}{2}$ a grain of the latter, every two or three hours; advantage may sometimes be derived from substituting a small quantity of Dover's powders, (from $\frac{1}{4}$ to $\frac{1}{2}$ a grain,) for the ipecacuanha. We should be extremely cautious, however, in the use of opiates in this or indeed in any stage of cholera infantum. Benefit may also be derived from the application of a bread and milk, or mustard poultice over the whole abdomen, or, as advised by Dr. Eberle, a poultice composed of two or three tablespoonfuls of powdered black pepper, with a few teaspoonfuls of Cayenne mixed up with a common poultice. Embrocations to the abdomen and lower extremities, with spirits of camphor, may also be used with advantage. Should there be symptoms of acidity, which may be ascertained by testing the stools with litmus paper, a few grains of magnesia may be given, and should the discharges continue so as greatly to debilitate the patient, two or three grains of prepared chalk may be added to the prescription of calomel and ipecacuanha. We cannot, however, protest too strongly against the injudicious use of astringents in this or any other stage of the disease. We once witnessed a case in which cerebral symptoms of an alarming character supervened in consequence of a sudden arrest of the alvine discharges by means of the chalk mixture, and the child's life became a forfeit.

Second stage.—The vomiting which, in the commencement, was more or less frequent, now occurs but seldom, while the diarrhœa continues; the stools vary much in appearance, but are more or less bloody and painful; there is also much restlessness, and the child is observed to draw up its limbs at the time of the discharge; the predominating colour of the stools is dark-green, looking like chopped spinach; the colour, however, is occasionally lighter, but mixed with portions of a darker hue, or with lumps of yellow more or less curdled. They are often of a bright yellow or chrome colour, or of a dark brown or chocolate colour, caused

by the admixture of grumous blood. The appearance of the stools varies much in the course of the day, the change of colour probably depending upon the greater or less quantity of bile and acid in the intestines; the abdomen is more or less tumid and painful on pressure; tenderness of the abdomen, with drawing up of the limbs, and bloody discharges are the most important signs in this stage of the affection; the temperature of the abdomen is usually elevated, while that of the extremities is cool; the pulse is small and feeble, or it is frequent and tense; occasionally it is intermittent; as the disease advances, the emaciation already observed progresses, the skin about the neck and thighs hanging in folds; the eyes become sunken in the orbit, and each is surrounded by a dark areola; the nose is sharp, and the lips are shrivelled; the feet become œdematous, and the cutaneous sensibility is so much impaired that flies collect upon the face without causing any uneasiness; petechiæ are occasionally observed at this period; the tongue is dry and incrustated, and covered with aphthæ, and deglutition is now more or less painful; the child is often observed to thrust its fingers far back into the mouth, from dryness of the fauces; the appetite becomes greatly impaired, and there is almost constant thirst. Dr. Dewees mentions the eruption of a quantity of minute vesicles upon the chest, which he considers a fatal sign. Dr. Condie states that he has known many instances of recovery, even when the eruption has been most extensive and distinct. We have observed it but in a single instance; the eruption, however, was not confined to the chest, but occurred in other parts of the body. Dr. Chapman speaks of the appearance of pink-coloured stools as a fatal symptom; this does not correspond with our own observations.

Anatomical characters of the second stage.—These consist essentially in inflammation with softening of the mucous membrane and ulceration of the follicles, more especially of the large intestine. The mucous membrane of the stomach in many cases presents its usual appearance and consistence; in others it is more or less injected and softened, the softening extending occasionally to all the coats, resembling the condition described by Cruveilhier, as characteristic of the disease termed by him *maladie gastro-intestinale des enfans*, and by Jæger, Gairdner, and others, softening of the stomach.

Rilliet and Barthez in their work on the diseases of children, notice the correspondence between the symptoms of softening of the stomach as described by Jæger, and those of cholera infantum; but an examination of the cases recorded in this paper will show that this condition of the organ is but rarely observed. The lining membrane of the stomach is not unfrequently covered with a layer of whitish opaque mucus easily scraped off with the handle of the scalpel; the mucous follicles both of the stomach and intestines are more or less apparent; the mucous membrane of the small intestine is occasionally softened, and for the most part pale in the

greater portion of its extent, contrary to the statements of Dewees and others, who consider the small intestine as being the exclusive seat of the disease. In one case the portion of intestine inflamed (the lower portion of the ileum,) presented a brick-dust colour interrupted with alternations of a pale yellow, mottled with red in some points; minute vessels were seen freely inosculating with each other; in other portions the inosculations were less distinct, there being a uniform reddish tinge. In another it was of a dull red, or brick-dust colour, minutely injected with red vessels, and in several points, especially upon the surface of the valvulæ conniventes, presented a dotted appearance; it occupied a portion of the intestine four inches in extent from the pylorus. In another case, (Case X,) the duodenum at its upper portion presented a slight shade of pink, with a few minute arborizations, and in several other instances there was a slight degree of inflammation affecting the duodenum at its upper extremity. There was also a slight inflammation of the glands of Peyer in one or two cases, but for the most part they presented nothing remarkable. The small intestines contained a considerable quantity of orange coloured mucus. The large intestine was more or less inflamed and softened in almost every instance; the inflammation existed in the form of bands, and presented a dotted arborescent appearance; in one case these bands were longitudinal; they were five or six inches in length, and several lines in breadth; in another case the bands were about two inches in length, having a minutely arboriform appearance, and were of a deeper red than the surrounding membrane; the first was situated one and a half inches from the cæcum, the second six inches from the first, and extended nearly the whole circumference of the gut; it was three inches in length and very minutely injected, but not so much as to destroy the arboriform arrangement. In most of the cases the redness was diffused, with occasional ramifications; in one instance the inflammation occupied the whole extent of the colon; it was of a vivid red throughout, and the membrane was much thickened. The inflammation was here also for the most part diffused, or in the form of bands occasionally presenting a ramiform appearance, the minute vessels freely inosculating with each other. From the margin of the follicles minute vessels were seen to radiate to the surrounding membrane, occupying the entire surface of the intestine, showing that the inflammation commenced in the follicles and extended subsequently to the mucous membrane. The follicles were often found to be more or less ulcerated, the ulcerations sometimes extending as far as the muscular coat; The ulcerations were more numerous and penetrated more deeply in the rectum than in other portions of the intestine; it was often completely riddled with them; we have not observed the surrounding membrane to be implicated to any extent; the mucous membrane was more or less softened in the greater number of cases; in one instance it was thickened; the membrane in this case was intensely inflamed. The coats of the intestine

were covered with a layer of mucus, sometimes so thick as to diminish considerably its calibre. It ordinarily contained a quantity of grayish coloured feces of the consistence of gruel. The lungs presented nothing remarkable but a slight engorgement posteriorly except in three cases, one of which was complicated with measles, and the remaining two with hooping-cough; in these cases the usual appearances of lobular pneumonia were present. In one case the patient had been attacked with pleurisy in consequence of exposure to the night air; at the autopsy a considerable quantity of pus was found effused in the cavity of the right pleura, and the lung was more or less disorganized. The peritoneum presented its usual healthy colour in all the cases observed; the liver was greatly enlarged in but a single instance, contrary to the statements of most authors who affirm this to be uniformly the case; the gall bladder was more or less distended with dark coloured bile staining the finger a deep yellow; the mesenteric glands were not enlarged; the spleen and kidneys presented nothing remarkable. In nearly all the cases the veins of the pia mater were more or less distended; the arachnoid was pale and moist, except in one case in which there was a slight opacity at the base of the brain; there was more or less effusion in the subarachnoid cellular tissue, for the most part limpid; occasionally it presented a whitish, opalescent or citron coloured appearance; the pia mater was more or less injected, but the injection for the most part appears to have been confined to the larger ramifications; it was easily removed by traction from the surface of the brain; the substance of the brain presented its natural appearance except in two cases, in one of which the central, and in the other both the central and the cortical portions were injected; it was softened in four of the cases; there was little or no effusion in the ventricles; in one instance the lateral ventricles appeared to be quite dry as if wiped with a cloth.

CASE I.—John William Macferran, ætat. nine months, light hair, blue eyes, was seized with a bowel complaint on Wednesday, Aug. 1st. The stools on that and the succeeding day were very frequent, occurring as often as once every ten or fifteen minutes; they were of a greenish colour, but no blood was observed in them; vomiting was not noticed until the 4th, when it occurred after taking some medicine, and ceased the next day. The pulse was frequent, the skin harsh and dry, and there was almost constant thirst; the abdomen was somewhat distended, but not painful on pressure; the lips and tongue were dry, the latter slightly coated at its base; the discharges on the 5th were much less frequent, occurring only about eight times, but the next day the diarrhœa returned, the bowels being disturbed about once every fifteen or twenty minutes. He was first directed to take powders of calomel, ipecac. and chalk, but producing sickness they were discontinued, when a mixture of blue mass was substituted; the discharges continuing with undiminished frequency they were laid aside, and powders each containing two grains of blue mass and chalk, and an equal quantity of bicarb. of soda were directed every three hours.

On the evening of the 6th he became worse; the bowels were not so

often disturbed, having been open only four times in the night, and three times the following morning, but a disposition to stupor first noticed in the evening now manifested itself with frequent jactitations and great feebleness of pulse; these symptoms continued to increase during the day, when I was requested to see the patient in consultation. The following were the appearances observed: decubitus dorsal; face slightly flushed; lids of left eye about a line apart; of right a line and a half; eyes suffused; lids tumid; conjunctiva slightly injected; pupils somewhat dilated; right rather more than left; both contract on exposure to the light; frequent automatic motion of left arm, occasionally putting it to the head; head and abdomen warm; lower extremities cool; at times screams out suddenly; pulse 150, small and feeble, but regular; respiration high and somewhat laboured, 42; no cough; chest sounds well on percussion; abdomen not distended, *painful on pressure*; bowels disturbed four times in the night, and five or six times to-day; stools greenish, slightly streaked with blood, and painful; no sickness of stomach. R.—Ten leeches to abdomen; cold to head. An enema of starch after each stool; continue blue mass mixture.

8th. 9 A.M. Decubitus same as yesterday; stupor continues; lids equally separated, about two lines apart. Conjunctiva covered with a thin film; pupils unequally dilated; contracting on exposure to light, but more freely than yesterday; look fixed; no cries since early this morning; fingers of left hand incurvated and slightly rigid; no convulsive movements; face slightly flushed; lips livid; pulse thread-like, almost imperceptible; feet and hands cold; head and abdomen warm; respiration high, 55 per minute; deglutition easy; bowels open five or six times in the night, three times this morning; stools small and painful, of a dark green colour tinged with blood. Died at one o'clock.

Autopsy, Aug. 9th, twenty hours after death.—*Exterior.*—Emaciation moderate; eyes sunken; tips of fingers, nails, and palms of hands, of a purplish colour; fingers incurvated; slight rigidity; no œdema of either upper or lower extremities; posterior parts of body mottled from position.

Head.—But little blood exterior to dura mater; the longitudinal sinus contains a moderate quantity of fluid blood; veins of pia mater distended; some milky serum in the subarachnoid cellular tissue; no granulations or tubercles; pia mater injected; the injection extends to the smaller vessels, which are of a light red colour; cortical substance of good consistence; the pia mater is readily separated from it by traction; medullary substance injected, presenting a dotted appearance on incision; consistence normal; the ventricles contain about $\frac{3}{4}$ of citron coloured serum; thalamic and corpora striata firm; septum lucidum healthy. *Base.*—The pia mater presents the same injected appearance as upon its convex surface; slight opacity of arachnoid; normal; no granulations or yellowish matter beneath it. The cerebellum presents nothing remarkable.

Neck.—Larynx pale, not ulcerated; trachea normal; thymus of natural size and appearance.

Thorax.—Pleuræ pale and moist, containing no serosity. Lungs pale, fawn-colour anteriorly; upper lobes posteriorly of a light pink or rosy hue; inferior light purple or violet; middle lobe pale fawn colour throughout; tissue of upper lobes of a bright red colour, perfectly crepitant; lower lobe of right of same colour, left slightly engorged; no tubercles in any part of lungs; mucous membrane of bronchi pale, consistence normal; bronchial glands not enlarged. Heart of normal size; greatest thickness of left ven-

tricle three and a half to four lines, exclusive of columnæ carneæ; of right a line; a little red blood in the ventricles; beneath the tricuspid valve is a fibrinous coagulum which extends some distance into the pulmonary artery; another is seen occupying the left ostium venosum; they are both of recent formation, adhering but slightly to the inner surface of the ventricles; valves healthy; foramen ovale closed; pericardium pale, perfectly healthy, containing about 3ss of light citron coloured serum.

Abdomen.—Peritoneum lining abdominal muscles moist, and of a pearly white colour; intestines neither distended nor contracted; peritoneal surface pale. *Liver* somewhat enlarged, of a triangular form, the right extremity extending from the lower edge of the fifth rib as far as the crista of the ileum, the upper margin extending from the same point to within an inch of the ribs of left side, in contact with the diaphragm. Externally it is of a bright chocolate colour; the same colour prevails internally, but is perhaps a shade paler; tissue quite free, not engorged; the two substances distinct; gall bladder much distended with dark coloured bile, of the consistence of West India molasses; mucous membrane of œsophagus at its lower part of a deep red colour, with no trace of vessels; surface dry; no ulcers; crypts not developed; stomach moderately distended, containing about 3ss of dark coloured fluid, of the consistence of gruel; mucous membrane covered with a thick coating of whitish opaque mucus, easily scraped off with the scalpel; surface beneath of a pale fawn colour in its pyloric half, remaining portion of same colour, except in the great cul-de-sac, where there are numerous arborizations, giving to this portion of the membrane a light pink or rose coloured hue; consistence normal, except along greater curvature, where it is somewhat softened; strips of ten lines being obtained from lesser curvature, four from greater, and five from great extremity. Numerous isolated follicles are observed upon its surface, more numerous and distinct towards pyloric orifice and along lesser curvature. *Small intestine*.—The upper portion of duodenum contains a quantity of dirty yellowish looking matter, having a brighter tinge towards its middle; at its lower part, it is of a dirty green colour, and of the consistence of thick mucus; the upper part of the jejunum also contains this matter, but the rest of the intestine, as well as a considerable portion of the ileum, is perfectly empty; the mucous membrane of the small intestine is pale throughout, and of normal consistence; strips of from three to five lines being obtained in the duodenum, and from five to six in the jejunum and ileum. Isolated mucous follicles are seen here and there upon its surface, but they are few in number; the glands of Peyer are not unusually developed. *Large intestine*.—Mucous coat throughout covered with a thick layer of tenacious mucus, having almost the consistence of jelly, opaque, and of a whitish colour, containing minute shreds or flocculi of coagulable lymph; the quantity of this substance is so great as to augment considerably the weight of the intestine, and, at first view, gave the impression that the coats of the intestine were enormously thickened; it is, however, readily scraped off with the scalpel; the membrane beneath is more or less inflamed throughout, of a dirty yellow colour, mottled or marbled with pink, here and there presenting a dotted appearance without trace of vessels, numerous crypts highly developed, more or less ulcerated, and occupying its entire extent; the lining membrane of the appendicula is thickly studded with them, giving it a highly reticulated appearance; the largest are about a line and a half in diameter, with a dilated central orifice of nearly the same dimensions; the ulcerations are for the most part confined

to the cellular coat, but several of them in the rectum extend as far as the muscular; the follicles are of a whitish opaque chalk-like colour, differing in this respect from the more uninflamed portions of the surrounding mucous membrane, which have a pearly hue after long maceration; it would appear that the whole of the gland in the commencement of the disease, contained this whitish caseous looking matter, and that the greater portion of it was subsequently removed, leaving only the margin or border surrounding the ulcerated opening in the centre; the follicles are more numerous, larger, and more deeply ulcerated in the rectum, than in other parts of the large intestine; the entire thickness of the coats of the intestine is about $\frac{3}{4}$ of a line; the mucous membrane is much softened throughout, strips of not more than a line or two being obtained; mesenteric glands about the size of peas, pale, firm, not tuberculous. Spleen of a light purple or violet colour externally, about two inches in length, $1\frac{1}{4}$ in breadth; tissue quite firm. Kidneys and pancreas healthy. Bladder contracted, containing not a particle of urine; mucous membrane pale.

Treatment.—We have seen that the second stage is characterized chiefly by tenderness of the abdomen on pressure, drawing up of the limbs, and bloody stools, symptoms which depend upon inflammation of the mucous membrane, more especially of the large intestine. The treatment, therefore, in this stage should be antiphlogistic. There can be no doubt, we think, that the mortality from cholera infantum has arisen in a great degree from not keeping its inflammatory character sufficiently in view. We have found inflammation of the mucous membrane of the large intestine in every autopsy that we have made, and evidence of its existence in an advanced stage of the disease clearly demonstrated in all the published cases that have come under our observation.

The chief object of the present essay, indeed, is to direct the attention of the profession to the above fact, and to the importance of antiphlogistic treatment, instead of the purgative plan usually pursued and with such fatal results. When the abdomen is distended and painful on pressure, with a tense, frequent or full pulse, v. s. should be resorted to. This is occasionally required at the commencement of the first stage, when there is much cerebral determination; should v. s. not be sufficient to remove the inflammatory condition, or when the state of the pulse does not indicate it, leeches or cups are to be applied to the abdomen; we have not been in the habit of directing cups in this affection, but from the great benefit which we have seen result from their use in the lobular pneumonia of children, we have no hesitation in recommending their employment. Mothers naturally object to what they conceive to be a harsh remedy, but by persuasion they can generally be induced to submit to it, and the great advantage we have uniformly derived from their employment in the last mentioned disease, we think warrants their use in this. The amount of pain is much less than is supposed, and the quantity of blood is more suddenly and effectually abstracted than by leeches, besides which there is no risk of subsequent hemorrhage. One, two, three, or

four cups may be applied to the abdomen, and be repeated should pain on pressure or the bloody discharges continue. It should be remembered that the reaction in children is seldom great, and that the most intense inflammation of the mucous membrane may exist, while the temperature of the skin is but little elevated; or may be quite cool, and the pulse feeble. Stimulants in these cases are too often given, and may destroy the patient; the true course is to pursue a cautious antiphlogistic treatment, supporting the patient at the same time by the blandest articles of nourishment. It has been advised to apply leeches to the anus, and this may occasionally be done with advantage. Injections of cold water, or iced water as the severity of the case may require, are recommended by Dr. Millar of New York, and we believe with great propriety. The remedy, he observes, though generally advisable, appears to be best adapted to that period of the disease when the alimentary canal has been previously well emptied of its acrid and offensive contents. Should there be reason to suppose the existence of such accumulations, the discharges being watery and mixed with indigestible food, with a tumid state of the abdomen, a grain of calomel may be given every hour or two until the bowels are disturbed. We have observed that the small intestines are but little affected in this disease, and we should think, therefore, that no objection could be made to the use of mild laxatives for this purpose, the treatment being the same as in dysentery. Castor oil, the oleaginous mixture in small doses, or the oil of butter, may also be employed. Injections of the liquor plumbi subacetat. dilut. (3j to a gill of water) are also productive of benefit, or the acetate of lead, in the proportion of five grains to a gill of water, for a child of two years. The internal remedies should be small doses of calomel and ipecacuanha as prescribed in the first stage, or the same dose of calomel combined with $\frac{1}{4}$ to $\frac{1}{2}$ a grain of Dover's powders every three hours. It may often be advantageously associated with acetate of lead, to the amount of from $\frac{1}{8}$ to $\frac{1}{4}$ of a grain, but we believe this remedy better adapted to a more advanced period of the disease. When there is much irritability, and the skin not preternaturally dry, the ext. hyoscyam. may be substituted for the Dover's powders. Emetics we consider decidedly objectionable in every stage of cholera infantum, notwithstanding that they have been recommended by high authority.

It will be observed that inflammation with ramollissement of the mucous membrane of the stomach, exists in a large proportion of cases, and emetics under such circumstances must be decidedly injurious. With regard to purgatives the same objection applies. *Laxatives* may occasionally be proper when there is reason to suspect the accumulation of irritating matters in the intestine, and of them the best, as above mentioned, is calomel either alone or in combination with a small quantity of Dover's powders (one-quarter to one-half of a grain), and followed by a dose of castor oil. We cannot too strongly urge upon the young practitioner the necessity of cau-

tion in the use of opium in this disease, or indeed in any other in which there is a determination to the head. The warm bath is a useful remedy, unless the child be too debilitated; he should be immersed in it up to the neck, and cloths wrung out of cold water applied at the same time to the head, in order to lessen the determination to the brain. Should the application of cups or leeches to the abdomen not be sufficient to remove the inflammatory symptoms, and the pulse be feeble or the patient much exhausted, blisters may be resorted to, but great care should be exercised in their employment lest gangrene ensue. We have seen very troublesome consequences arise from the application of blisters to children, and in one instance we think the child lost its life from their imprudent use. They should never be suffered to remain more than three hours, and after their removal, a large emollient poultice should be applied over the whole abdomen. Should there be symptoms of cerebral congestion manifested by stupor, rolling about of the head, or a disposition to coma, cloths wrung out of cold water, or vinegar and water, or a mixture of equal parts of lead water and spirits of wine should be applied to the head. Should these symptoms continue, leeches in small numbers may be applied to the temples or behind the mastoid processes. Counter irritation should also be made by stimulating pediluvia, or the application of sinapisms to the extremities.

Cholera infantum not unfrequently becomes chronic, the symptoms being very much the same as those of ordinary diarrhœa, or the patient may sink into a typhoid state. The remedies in this case consist of the warm bath, to which salt, mustard, brandy or Cayenne pepper may be added, counter irritating applications to the abdomen, and the internal use of mild astringents. When the diarrhœa is such as to exhaust the patient, the cretaceous preparations may be cautiously employed, great care being taken not to arrest the discharges too suddenly.

The following prescription has been proposed by Dr. Parrish for this purpose. R.—Potassæ sub-carb, ʒj; gum acaciæ, ʒj; tr. opii, gtt. vj; aq. cinnam, ʒiiss; sacch. alb., ʒj. M. A teaspoonful to be taken every two or three hours. Should this not be sufficient, the following may be employed. R.—Test. ostrear. ppt., ʒiiss; gum acaciæ, ʒj; tr. thebaic, gtt. x; sacch. alb., ʒj; aq. pur. vel aq. cinnam., ʒiv. M. Sig. A teaspoonful every two hours.

Dr. Condie states that he has derived great advantage from the use of charcoal in chronic cases of this affection, when the discharges were of a dark colour, acrid and offensive. He employs it in combination with powdered rhubarb, ipecacuanha, and the extract of hyoscyamus, according to the following preparation. R.—Carb. ligni, ʒj a ʒij; pulv. rhei, ʒij; ipecac. grs. iv a grs. xij; ext. hyoscyam. nig. grs. xij. M. ft. chart. xii. Sig. One to be taken every three or four hours. Lime water and milk may also be given in these cases, also equal parts of charcoal and magnesia.

Care ought to be taken not to continue the use of the charcoal too long, as serious accidents are said to have arisen from its accumulation in the bowels. The infusion of soda and hickory ashes is said also to be beneficial. The syrup of rhubarb may be given in doses of from twenty drops to a teaspoonful every two or three hours, or the powder according to the following formula. R.—Pulv. rhei, grs. xv; pulv. ipecac. grs. v; magnes. calcinat. grs. xx; sacch. alb. \mathfrak{z} j; tr. opii gtt. x; ol. anis. gtt. v or gtt. vi; aq. \mathfrak{z} ij. M. A teaspoonful every hour or two (Dr. Chapman). Columbo root in powder or infusion may also be employed. (Dose from two to three grains.) The infusion of the common logwood (*hematoxylon campechianum*), Dr. Chapman states, was much employed by Dr. Physick in this stage of the disease. The dose is a teaspoonful. A decoction of the bark of the pomegranate root (*punica granatum*), or of the flowers, is also considered useful. The best of all these vegetable astringents, according to Dr. Chapman, is a strong infusion of the leaves of the dew (*rubus trivialis*) or of the blackberry root (*rubus villosus*). The dewberry is preferable from its greater strength. The dose is about a teaspoonful. The alum plant (*Heuchera Americana*), a common plant in the neighbourhood of Philadelphia, has also been highly recommended as an astringent in this affection. Alum, in the dose of one or of two grains with a small quantity of opium may also be employed, or the acetate of lead in combination with the same remedy. Dr. Eberle states that in the advanced stage of this disease, he has occasionally derived considerable benefit from the use of the tartrate of iron according to the following formula. R.—Ferri tartrat. grs. xl; syr. zingiberis, \mathfrak{z} ss; aq. pur. \mathfrak{z} ij. M. From twenty to forty drops to be given to an infant four or five times daily. Dr. Chapman advises the sulphate of iron under the same circumstances. R.—Ferri sulphat. grs. ij; acid sulph. gtt. x; sacch. alb. \mathfrak{z} j; aq. \mathfrak{z} j. M. Dose a teaspoonful as often as necessary. Dr. Meigs has written favorably of a plunging tepid bath made of the infusion of the white oak bark. *American Medical Recorder*, vol. iii. p. 507. He states that it produced a rapid amendment in one case in which he tried it, and a perceptible improvement in another. When the discharges from the bowels are small in quantity, thin, dark coloured, and highly offensive, with flatulency, the spirits of turpentine may be given. Turpentine in the acute form should never be employed. It is a "deadly remedy." The following is the formula proposed by Dr. Condie. R.—Mucilag. g. acaciæ, \mathfrak{z} ij; sacch. alb. \mathfrak{z} vj; spt. æth. nitros. \mathfrak{z} ij; spt. terebinth. \mathfrak{z} ij; magnes. calcinat. grs. xij; spt. lavand. comp. \mathfrak{z} ij. M. Sig. A teaspoonful three times a day, or oftener when the child is over two years of age. The juniper oil is also considered an excellent palliative for this purpose. R.—Ol. junip. \mathfrak{z} ij; sulph. ether \mathfrak{z} ss; tr. opii gtt. xl. M. Sig. From ten to fifteen drops from three to four times daily. The balsam copaiba may also be employed. The dose is from three to five drops. Dr. Parrish states that he has frequently directed an infusion of bark and cinnamon in lime water in the

following proportions. R.—Best bark coarsely powdered, \mathfrak{zss} : cinnamon $\mathfrak{z}ij$; lime water $\mathfrak{z}ijj$. M. It should be suffered to stand a little while and then decanted; a dessertspoonful may be taken several times a day. With this remedy we have no experience. The bark jacket is also occasionally employed. Injections of bark may likewise be given. These remedies should be employed only when the symptoms are of a typhoid character, the vital forces being insufficient to sustain the patient. When the child is greatly exhausted, stimulating frictions to the body with flannels wrung out of hot brandy and water, or whisky should be used, or if the exhaustion be extreme, it may become necessary to resort to stimulants internally, as wine whey, or a weak solution of carbonate of ammonia. Dr. Eberle states that in these circumstances he has derived great advantage from the tincture of cinnamon in doses of from fifteen to twenty drops in some mucilaginous fluid every four hours. When the discharges are very frequent, attended with great exhaustion, the spiritus ammoniæ aromaticus in combination with the chalk mixture is a useful remedy. Dr. Hartshorne, one of the most eminent practitioners of this city, recommends the use of creosote in the advanced stage of this disease. The following is a formula he employs. R.—Creosote gtt. j; test. ostrear. præparat. $\mathfrak{z}ij$; g. acaciæ pulv., \mathfrak{zss} .; aq., $\mathfrak{z}vj$. Dose a teaspoonful every two hours for a child two years of age.

Tannin, we would suppose might also be advantageously employed in the chronic form of the disease when the discharges are abundant. It is said to be less likely to irritate the stomach and bowels than the ordinary astringents. The dose for a child of two years is one-fourth of a grain every three hours, or of the pure tannin one-twenty-fourth of a grain repeated as often.

When there is an aphthous condition of the fauces, Dr. Parrish thinks he has found nothing do so much good as a gargle of lime water and bark. Dr. Griffiths, he observes, in some protracted cases of cholera, was in the habit of prescribing scalded lemonade to the child, and with a very happy effect.

Great attention must be paid to the diet. If not weaned, the child should be confined to the breast, with the occasional use of barley water, toast, or gum water. So long as the inflammation is inactive, or when it has subsided or has assumed a chronic form, articles of a more nourishing kind may be allowed, as boiled milk, tapioca, arrowroot, or sago, or thin oatmeal gruel, or flour boiled in milk; the flour should be put in a rag, and then boiled until it becomes hard, and grated. This, we believe to be a most excellent article of diet. We know a remarkable instance of chronic dysentery in the adult, cured by small doses of calomel and opium, and confinement to this diet when all other means had failed. In the chronic form of the disease when the patient is greatly debilitated, the appetite occasionally becomes craving for certain stimulating articles of

food, which it may be right to gratify. Dr. Parrish relates several instances of this kind in his lectures. Dr. Wistar, he observes, used to mention the case of a child that was brought to the parlor while the family were at dinner. It was extremely weak, and seemed to be in the last stage of the disease. It showed a strong disposition for some ham which was on the table. The black skin covering the ham was the part which it seemed particularly to desire. It was gratified, and it did not discontinue sucking the piece until it had deprived it of its nutritious juices. From this time it began to recover, and ultimately got well. Dr. Wistar was so convinced of the importance of the above practice that he used to tempt his little patients with small pieces of ham. Some would eat it, others seemed to have no desire for this kind of food. In the latter case he did not press it upon them. Dr. Parrish states that he often prescribed the essence of ham in these protracted cases of cholera. He directs the juice to be bottled up to prevent it from becoming rancid, and to be used as occasion requires. He also relates an instance of a child under similar circumstances that seemed very anxious to eat some butter which was on the table; this child was also indulged, and it continued to devour the butter, lump after lump, until it had made way with the whole. From this time it was allowed as much butter as it desired, and under this plan it recovered.

The same directions with regard to ventilation apply to this as to the first stage.

Third stage.—Symptoms. The symptoms indicative of this stage of the affection are an unusual disposition to drowsiness or stupor, rolling of the head, and chewing motion of the under jaw, succeeded by convulsive movements or rigidity, of one or more extremities followed by paralysis. When the disease has progressed thus far, it may be considered almost, if not entirely beyond hope.

Anatomical characters.—These consist essentially, in disorganization of the structure of the brain from softening of its tissue. The softening is sometimes general, but is more often confined either to the cortical substance, or to the central portions of the brain and cerebellum. The softening may exist to such a degree as to cause the brain readily to give way on slight pressure, or its substance may be rendered quite diffuent so as to resemble cream. These effects are the result of long continued irritation; the substance of the brain when cut into, usually presents numerous red spots from effusion of blood. The pia mater is more or less injected, and its veins much distended. There is also effusion of serum in the subarachnoid tissue, and to a greater or less amount in the lateral ventricles. This, however, is not always the case, the surface being sometimes quite dry.

CASE II.—Patrick Clark, ætat. 1 year and 8 months, hair brown, eyes gray, with the exception of an attack of croup at the age of three months,

enjoyed good health until the 28th of June, when he was seized with diarrhœa, succeeded the next day by vomiting; the vomiting commenced in the afternoon, and continued at intervals during the whole of the next day and part of the day following; the stools in the commencement amounted to about fourteen in the twenty-four hours, and were of a yellow colour, resembling the yolk of an egg; no blood was observed in them until yesterday, when there was also a slight return of the vomiting. He has not yet been weaned. Present state, July 5th, 1838. Decubitus dorsal in the lap of the mother; lids not entirely closed, eyes sunken in the orbits, and surrounded with a leaden-coloured areola; appears quite languid and weak, uttering frequent moans. This morning the eruption of measles made its appearance, extending over the face, breast and upper extremities, the back of the neck, and between the shoulders, where it is most copious; skin warmer than natural, hot at night; head and abdomen warmer than other parts of body; pulse 130, respiration 30, tongue coated with a whitish fur, papillæ prominent; bowels open seven times within last twenty-four hours; stools for the most part of a greenish-yellow colour, and quite offensive, at times consisting entirely of blood, not painful; no convulsive movements; has been taking the following powders by the advice of Dr. Boyer. R.—Sub. mur. hydrag. grs. ij; cret. ppt. ℥j. M. ft. pulv. xij. Sig. One every three hours.

6th. Worse; bowels open twelve times since last report; discharges painful; stools yellow, not curdled, rather large, not bloody, has vomited once. *Present state*.—Great irritability, crying almost incessantly, with frequent automatic movements of hands; these paroxysms are often interrupted by a doze, which lasts but for a few minutes; eyes slightly diffused, lids red and tumid, equally separated, about two lines apart; nostrils not in motion; lips and tongue quite dry, the latter covered at base and in its middle with a whitish yellow fur; skin of extremities cool, warm upon head and abdomen, which is supple and bears pressure well; pulse 130; eruption of measles confined to upper half of body, generally pale, but quite distinct, looking like flea bites; respiration 36, cough dry, of moderate frequency; chest sounds well on percussion; pupils not dilated; no convulsive movements. The most marked symptoms are the extreme restlessness, and the peculiar cry accompanying it indicative of cerebral irritation. R.—Mustard pediluvium; stimulating poultice to abdomen; ten leeches to temples; continue powders at night.

7th. Bowels open twenty times or more since last visit; stools slimy, looking like "corrupted blood;" abdomen not distended, somewhat tense; cries when pressure is made upon it, but whether from pain is a matter of doubt; tongue coated with a whitish-yellow fur, thicker at edges than in middle; slight nausea but no vomiting; decubitus dorsal, somewhat inclined to right side, the child dozing for a few minutes, then awaking and crying, with constant jactitation; eruption pale upon abdomen, very pale and sparse upon lower extremities, more vivid and confluent upon arms; respiration 29; cough more loose, not frequent; pulse 125, of moderate volume, regular; pupils slightly dilated, contracting rather feebly on exposure to the light; urine free. R.—Mass ex hydrag. grs. iij; mucilag. g. acaciæ ℥iss. Sig. A teaspoonful every three hours. R.—Emplast. vesicat. 2+2 to calves of legs.

8th. Bowels so often disturbed, that no account could be kept of the number of discharges; three times during visit, which lasted about three-quarters of an hour; stools of a greenish-yellow colour in the night; those of

this morning of a light yellow or fawn colour, looking like pus, with grumous blood intermixed, and of gelatinous consistence; abdomen tense, not tumid; painful on pressure; the pain appears greatest in right iliac region; nostrils slightly in motion, lips dry, mouth partially open; respiration 33, high and laboured; cough frequent, short, and rather loose; chest sounds well on percussion throughout; sonorous rale on both sides posteriorly, more distinct in front where the respiration is pure, and expansive, pulse 132, without tension, regular, not intermittent, temperature of skin not elevated, but warmer than natural, nearly uniform; moans and cries frequent; left arm much in motion, right but seldom; no convulsive movements. R.—Twelve leeches to temples; cold affusions to head; injections of starch every hour; mush poultice with Cayenne pepper to abdomen.

9th. Bowels open thirteen times since last visit; stools for the most part of a light yellow, or dirty yellowish-white colour, mixed with grumous blood, and voided with pain; several of them were quite yellow, not containing any blood; others were of a deep grass green colour; tongue clammy, covered with a whitish exudation, occupying its sides chiefly, also the anterior half of the palate, the gums and inside of lips; respiration 48, cough rare, rather loose; pulse 140, small and regular, thirst constant; skin dry and harsh, but little warmer than natural; cries more feeble; deglutition easy.

10th. Stupor almost constant, interrupted by frequent moans and cries; left arm much in motion, pupils dilated; vomited once, in the night, after coughing; bowels open eight times since last visit; stools of a dark-green colour, and slimy, attended with much pain; during an evacuation, the limbs are drawn upwards, and the pain is so great, as to cause the child to scream out; respiration 48, high, and laboured; cough frequent, but loose; percussion normal, with mucous and sonorous rales posteriorly; pulse 140, quite feeble. R.—Blistered surfaces to be dressed with equal parts of ung. hydrag., and simple cerate; the same to be rubbed in arm-pits and groins.

11th. Died last evening at 7 o'clock. The bowels were disturbed twice after the last visit, the stools being of a dark green colour. The child appeared to be in great pain, but no convulsive movements were observed.

Autopsy, July 11th, sixteen hours after death.

Exterior.—Emaciation moderate; no œdema of feet and ankles; posterior parts of body, mottled from position.

Head.—But little effusion of blood on separation of dura mater; arachnoid moist, but no effusion beneath it; veins of pia mater much distended, the membrane itself not injected; cortical substance of a pale ash colour; medullary substance quite pale; no dotted points observed on cutting into it; it appears to be softened throughout; the corpora striata, and thalami nervorum opticorum are firmer than surrounding portions of brain, but moderate pressure made upon any part, causes it to give way readily; no serosity in cavity of ventricles; the surface is quite dry; the cerebellum also appears softer than natural, but in other respects presents nothing remarkable.

Thorax.—Pleuræ free, containing no serosity. Anterior surface of lungs of a pale fawn colour, except toward base, where they are of a light pink, or violet hue; posteriorly they are of a violet colour, more deep towards base; lower lobe of left lung engorged; on cutting into it, exudation of spumous blood of a dark colour; tissue crepitant; lower lobe of right lung also engorged but in a less degree than that of left; upper lobes healthy;

mucous membrane of trachea and bronchi pale, not injected. Heart of normal size, firm; left ventricle about three lines in thickness; pericardium healthy, containing no serosity; œsophagus pale; no ulcerations; mucous follicles not developed.

Abdomen.—Peritoneum lining abdominal muscles pale, and perfectly dry; no serosity in abdominal cavity; intestines moderately distended with gas, and pale, except a portion of small intestine, afterwards found to be the ileum which presents a reddish appearance; surface moist; several stains of a deep yellow colour upon the large intestine where it lay in contact with the gall bladder. *Liver* very slightly if at all engorged, its anterior edge or border not extending more than three or four lines below the margin of the ribs; colour pale red, tissue quite firm, not engorged, the two substances quite distinct; gall bladder moderately distended with bile, staining the finger a deep orange; lining membrane of a uniform tea green colour. *Stomach.*—Pale externally, except at its greater extremity, where it has a slate-coloured appearance; mucous membrane pale, of normal consistence, except at the great cul-de-sac, where it is of a deep slate-colour, and much softened, slight pressure with the finger nail reducing it to a pulp. *Small intestine.*—Duodenum moderately distended, neither contracted nor dilated; peritoneal surface of a light rose colour, owing to the presence of numerous small arborescent vessels, perfectly distinct from each other; held up to the light it exhibits numerous black points, each of the size of a small grain of sand, distinctly visible; it contains a considerable quantity of matter of a light yellow colour, having a somewhat frothy or curdled appearance and a pap-like consistence; mucous membrane in a space of four inches from the pyloric orifice of stomach of a dull red or brick-dust colour, minutely injected with red vessels, and in several points more especially upon the surface of the valvulæ conniventes, presenting a dotted appearance. In a space one inch in extent from the pylorus the mucous membrane is uneven to the touch from the presence of numerous crypts in a state of development; mucous follicles throughout very numerous and distinct, the centre of each being marked by a black point, corresponding with that observed on the outer surface through the coats of the intestine; they are more abundant and more closely approximate each other in the upper third, where, in some places, they are scarcely half a line apart. In the lower third these points are much more sparse, but occasional agglomerations nevertheless occur; the mucous membrane, except in the space above described, is quite pale and of normal consistence, yielding strips four lines in length. The jejunum contains a quantity of yellowish matter, paler than that in the duodenum, and less abundant; mucous membrane pale, not softened, yielding strips five lines in length; cryptæ much less numerous than in duodenum and less distinct. Mucous membrane of *ileum* pale, with occasional arborizations, communicating to the intestine a light rose or pink coloured hue in the spots in which they occur; consistence normal, yielding strips of same length as in duodenum. About four or five feet from the commencement of the small intestine is a group of muciparous glands isolated and considerably elevated above the surrounding mucous membrane, looking at first like ulcerations upon its surface, but on a more careful examination they are evidently mucous follicles, having each in its centre a minute opaque orifice; glands of Peyer more developed than in the healthy state, but not ulcerated; the contents of the intestine resemble those of the jejunum. *Large intestine.*—Mucous membrane of large intestine in a space about

five inches from its commencement, of a dirty yellow colour stained by the contents of the bowel; immediately below this, the colour is dusky yellow mottled with pink; the remaining portion of the large intestine is of a pink colour interrupted once or twice, but for a short distance, by patches of yellow; the pink coloured portion is very minutely injected, having an uniform dotted appearance; the follicles throughout are very numerous and distinct, the larger being about a line in diameter; they are more or less ulcerated, the mucous membrane being entirely destroyed in most of them, leaving the subjacent cellular tissue fully exposed; the mucous membrane of the intestine itself is softened, yielding strips from one to two lines in length. The contents of the large intestine consist of a yellowish matter, having about the consistence of thin cream, differing from the matter found in the small intestine, in being more abundant, of a darker hue, and more fluid.

Mesenteric glands enlarged, some of them of the size of a small bean; colour pale gray, tissue firm, pale, not tuberculous; *bladder* contracted; *spleen* of a bluish slate colour, not enlarged; *kidneys* healthy.

Treatment.—Notwithstanding the hopeless condition of the patient, it is our duty to make use of such means as afford any, even the slightest prospect of relief. These consist in the application of leeches to the temples and to the mastoid processes, with blisters to the nape of the neck. They should be dressed with mercurial ointment. The treatment in fact is the same as in tubercular meningitis, and we think we have derived more benefit from the use of blisters in that affection, than from any other means. Cloths wrung out of cold water, or of vinegar and water should be at the same time kept constantly applied to the temples.

Diagnosis.—Cholera infantum may be confounded with tubercular meningitis, or dropsy of the brain. From this, it may be distinguished by the frequency of the discharges, whereas, in the former affection the bowels are usually torpid, and by a proper acquaintance with the natural history of the disease. In tubercular meningitis the premonitory symptoms are such as indicate an affection of the brain; it occurs for the most part in delicate scrofulous children. Cholera infantum commences with looseness of the bowels. In tubercular meningitis, the cerebral symptoms predominate in the commencement. The child is restless and irritable, and complains of acute pain in the head, referring it chiefly to the forehead; the pain is intermittent, and is usually accompanied with a peculiar cry, which has been considered by Coindet and others as pathognomonic; the sleep is more or less disturbed, and there is frequent tossing about of the hands; the head is rolled from side to side, and there is more or less moaning and grinding of the teeth; delirium is almost a constant symptom, and the countenance assumes a peculiar characteristic appearance; this is so marked that even the nurses at the children's hospital of Paris, easily recognize the disease. It is only in the advanced stages, that cholera infantum can be confounded with tubercular meningitis when the patient relapses into a state of drowsiness or stupor; which is a prominent symptom of the advanced stage of hydrocephalus, and is often

accompanied or preceded by convulsions. Cholera infantum may be confounded with the *typhoid fever* of children. To this affection it bears a close resemblance; it may be distinguished from it, however, by the absence of gargouillement, of the numerous lenticular spots which in typhoid fever usually make their appearance from the sixth to the twelfth day, by the agitation and slight delirium at night; the prominence of the spleen, the character of the fever, which is more intense, and continues beyond the ninth day; and the existence of the sibilant rale, all of which are prominent although not constant symptoms in typhoid fever.*

The resemblance between the two diseases is such that it is often impossible to distinguish them apart. Cholera infantum may also be confounded with softening of the stomach. The similarity between the symptoms of gelatinous softening of the stomach, as described by Jæger, and those of cholera infantum, appears indeed to be striking; the coincidence has been observed by Rilliet and Barthez, who do not describe the latter disease as a distinct affection occurring in Paris. The following are the signs of gelatinous softening of the stomach, as laid down by them in their invaluable work. If a child be taken suddenly with obstinate vomitings which persist, with insatiable thirst, with pain in the abdomen, with abundant diarrhœa; if at the same time it emaciates with rapidity, whilst the gastric symptoms *almost exclusively* predominate, we may then infer a gelatinous softening of the stomach.—(Tom. i. p. 467. Art. *Gastrite et Ramollissement de l'Estomac*.)

Prognosis.—The prognosis in cholera infantum may be considered favourable when the pulse becomes slower, when the temperature is restored to the surface, when the vomiting ceases, and the alvine discharges become less frequent, and more natural; an opposite opinion may be formed when the pulse continues feeble; the surface remains cold; the discharges become very frequent, resembling the washings of meat, accompanied with great uneasiness and jactitation, or a disposition to stupor; should there be rigidity and a partial loss of power of the extremities, the patient may be considered almost if not entirely beyond the reach of art.

* Rilliet et Barthez, *Traité clinique et pratique des maladies des enfans*, t. ii., p. 312

NO.	SEX.	AGE.	BRAIN.	THORAX.	ABDOMEN.
1	Male.	3 months	Not examined.	Right lung hepaticized inferiorly; pleuritic adhesions of left side; left cavity filled with pus; hepatization of left lung; bronchial tubes injected; heart of normal dimensions, but pushed considerably to right side.	Mucous membrane of large intestine pale, except two small arborizations; follicles greatly developed; mucous membrane of stomach softened, pale; liver somewhat enlarged; tissue congested; mucous membrane of small intestines natural; small and large intestines contain a quantity of yellowish fluid; bladder injected; other organs healthy.
2	Female.	6 months	Congestion of veins of pia mater; pia mater much injected; no opacity of arachnoid; no subarachnoid effusion; substance of brain healthy; no effusion within ventricles.	Lobular pneumonia; a few lobules of emphysema along the anterior margin of upper lobe of right lung; lining membrane of trachea and bronchial tubes injected; heart natural.	Mucous membrane of stomach injected at great cul-de-sac; slightly softened along the greater curvature; stomach contains about a teaspoonful of inodorous fluid; mucous membrane of small intestine pale, and of normal consistence throughout; glands of Peyer healthy; the small intestine containing a quantity of matter of the consistence of pap, yellowish in the duodenum, of a light orange colour in the jejunum; crypts indistinct, except in a space about an inch in extent at commencement of intestine; mucous membrane of large intestine coated with a layer of mucus of a dirty white colour; mucous membrane highly inflamed throughout; glands greatly developed, many of them ulcerated; membrane softened. <i>Liver</i> not enlarged, texture firm; gall bladder contains about $\frac{3}{4}$ ss of orange coloured bile; peritoneal coat of intestines dry as if wiped with a cloth. Bladder, spleen, and kidneys healthy.
3	Female.	1 year 8 months	But little effusion of blood on separation of dura mater; no subarachnoid effusion; veins of pia mater much congested; pia mater not injected; substance of brain softened; no effusion within the ventricles.	Lungs engorged; no injection of trachea or bronchial tubes; heart natural.	Mucous membrane of stomach pale and of normal consistence, except in great cul-de-sac, where it is of a deep slate colour, and softened; no peritoneal effusion; that portion of peritoneum lining abdominal muscles perfectly dry; <i>liver</i> very slightly, if at all enlarged; tissue firm; <i>gall bladder</i> distended with bile staining the finger a deep orange; small intestine contains a quantity of yellowish matter of pap-like consistence, of a lighter colour in the jejunum; mucous membrane of the small intestine four inches in extent from pylorus, of a dull red or brick-dust colour, minutely injected; mucous follicles throughout duodenum numerous and distinct; less numerous and distinct in jejunum; mucous membrane of ileum pale, with occasional arborizations; rest of small intestine pale, with the exception above mentioned; consistence normal; plaques of Peyer more developed than in the healthy state, but not ulcerated; mucous membrane of large intestine inflamed and softened; follicles much developed and more or less ulcerated.

NO.	SEX.	AGE.	BRAIN.	THORAX.	ABDOMEN.
4	Male.	2 years 2 months	But little blood exterior to the dura mater; veins of pia mater much distended; slight subarachnoid effusion; pia mater moderately injected; right hemisphere and central portions of brain softer than natural; a spoonful of limpid serum in each ventricle.	Pleuræ free; lungs engorged posteriorly and inferiorly; heart normal.	Peritoneum dry as if wiped with a cloth; liver not enlarged, tissue firm, not engorged; gall bladder greatly distended with thin fluid bile, staining the finger a light orange; stomach contains a quantity of matter of a dirty-green colour, of the consistence of gruel; mucous membrane pale and more or less softened throughout; thinner than natural in the great cul-de-sac; mucous follicles distinct, but not remarkably developed; small intestine pale throughout, except in a space two inches or more in extent, at the superior extremity of the ileum; one of the glands of Peyer reddened, and slightly prominent, but not ulcerated; mucous follicles distinct in the ileum, less in rest of intestine; contents of a liquid yellow colour approaching to orange; feces yellow in large intestine; mucous follicles very abundant, margins much inflamed; mucous membrane softened; other organs healthy.
5	Female.	15 mo's	Veins of pia mater moderately distended; considerable quantity of subarachnoid effusion; arachnoid moist; pia mater somewhat injected; medullary substance of moderate firmness; no serosity in cavity of ventricles.	Lower lobes engorged; heart normal.	No peritoneal effusion; a small ulcer at the lower extremity of the œsophagus; liver enlarged; tissue firm, of a pale fawn colour internally; gall bladder distended with bile of the colour of W. India molasses, staining the finger a dark orange; stomach contains a quantity of darkish coloured fluid, having the consistence of gruel; mucous membrane pale; crypts largely developed; duodenum pale red in a space two inches from pylorus; a slight arborization in the jejunum about an inch in extent; crypts few and indistinct; first eight inches of ileum healthy, remainder more or less inflamed and softened; plaques of Peyer developed, but not ulcerated; duodenum contains a quantity of orange coloured mucus, of the consistence of pap; jejunum contains a quantity of matter similar in consistence to that of the duodenum, but of a paler colour; large intestine contains a quantity of yellowish matter thinner and paler than in small intestine; mucous follicles greatly developed and ulcerated; mucous membrane inflamed and softened; mesenteric glands enlarged, some of them of the size of a small bean. Bladder and other organs healthy.
6	Male.	2 months	Veins of pia mater much distended; no opacity of arachnoid; slight effusion beneath; pia mater moderately injected; cortical and medullary portions of brain healthy; no effusion within the ventricles.	Lobular pneumonia of both lungs; bronchial tubes injected.	Liver not enlarged or congested; colour brownish-yellow, tissue firm; gall bladder moderately distended with fluid of an orange-brown colour; stomach contains a moderate quantity of fluid looking like gum water; mucous membrane much injected throughout; small intestine covered with a thin layer of mucus; mucous membrane pale, but softened; glands of Peyer healthy; mucous crypts not distinct except at its upper extremity in the space of an inch, which is thickly studded with them; it contains a quantity of yellowish fluid; large intestine contains feces of a green colour, mixed with yellow lumps; surface covered with a layer of dirty white mucus; mucous membrane of a light pink colour throughout; mucous crypts developed but not evidently ulcerated, many of a bright red or pink colour.

7	Male.	13 mo's	<p>Veins of pia mater moderately distended; no marked injection of the pia mater; arachnoid pale and moist; a considerable amount of light citron coloured effusion beneath it; cortical and medullary substance of brain healthy; ventricles contain each about $\frac{2}{3}$ ss of serosity; cerebellum healthy.</p>	<p>Lungs engorged posteriorly; lobular pneumonia of right lung; trachea and bronchial tubes somewhat injected; heart normal.</p>	<p>Liver greatly enlarged, occupying about two-thirds of the abdominal cavity; tissue moderately firm, presenting a light yellow colour throughout; two substances very indistinct; gall bladder distended with bile of the consistence of W. India molasses; spleen congested: stomach contains a considerable quantity of dark coloured fluid; mucous membrane pale and of good consistence; small intestine contains a considerable quantity of fluid of the colour and consistence of gruel; towards the lower extremity of the ileum it has a yellowish hue; mucous membrane pale throughout, but softer than natural; crypts very distinct, especially in the lower part of the ileum; glands of Peyer healthy; large intestine contains a moderate quantity of yellowish feces; mucous membrane quite pale, except in a space four or five inches from its inferior termination, which presents a slight trace of redness; mucous crypts greatly developed; no ulcerations; mucous membrane softer than natural; mesenteric glands and other organs healthy.</p>
8	Male.	3 weeks	<p>A considerable quantity of effusion in subarachnoid tissue; pia mater injected; substance of brain firm; little or no serosity in ventricles; consistence of cerebellum natural.</p>	<p>Lower lobe of right lung congested; lining membrane of trachea and bronchial tubes pale; pleural and bronchial glands healthy; heart healthy.</p>	<p>Stomach contains a quantity of gelatinous fluid looking like the white of an egg; mucous membrane thickly coated with same substance; liver much congested and friable; two substances indistinct; gall bladder distended with bile of the colour and consistence of W. India molasses; spleen healthy; a dozen of small gravelly concretions in right kidney; small intestine contains a quantity of mucus of a light yellow colour approaching to orange; mucous membrane of duodenum pale, except at its upper portion, in a space of about four inches, which presents a shade of pink; three inches of lower portion of jejunum minutely injected and softened; consistence natural elsewhere; mucous membrane of ileum pale for the most part, presenting a slight tinge of pink in spots, softened in injected portions, but elsewhere normal; numerous follicles are observed in the lower part of the ileum; plaques of Peyer healthy; large intestine intensely inflamed throughout its whole extent; mucous membrane thickened; follicles less developed than usual, several of them ulcerated; internal surface coated with a thick layer of mucus; mesenteric glands healthy.</p>
9	Male.	9 months	<p>Veins of pia mater distended; some milky serum in subarachnoid tissue; pia mater injected; ventricles contain about $\frac{3}{4}$ of citron coloured serum; medullary substance injected, of natural consistence; cor-</p>	<p>Lungs slightly engorged; bronchial membrane pale; heart normal.</p>	<p>Liver somewhat enlarged, of a light chocolate colour internally; tissue firm, not engorged; gall bladder much distended with dark coloured bile; mucous membrane of oesophagus of a deep red colour at its lower part; mucous membrane of stomach thickly covered with a coating of whitish opaque mucus; somewhat softened along the greater curvature; numerous arborizations in great cul-de-sac; mucous follicles distinct; mucous membrane of small intestine pale throughout, and of normal consistence; mucous follicles but few in number; glands of Peyer healthy; large intestine covered with a thick layer of tenacious mucus; membrane more or</p>

No.	Sex.	Age.	Brain.	Thorax.	Abdomen.
10	Female.	6 months	<p>Arachnoid pale and transparent, moist; pia mater slightly injected; a considerable quantity of serum in subarachnoid tissue; veins of pia mater moderately distended; cortical substance healthy; medullary substance pale; central portions of corpus callosum softened; 5i of serum in lateral ventricles.</p>	<p>Lungs slightly engorged; a few lobules of hepatization; heart normal.</p>	<p>less inflamed throughout; mucous crypts highly developed, and more or less ulcerated, some of the ulcerations in the rectum extending as far as the muscular coat; mucous membrane softened throughout; mesenteric glands and other organs healthy.</p> <p>Liver of a deep purple colour, engorged; gall bladder moderately distended with dark coloured bile, staining the finger light yellow; mucous membrane of stomach pale, and apparently of good consistence; crypts not apparent; duodenum and upper portions of jejunum contain a quantity of orange coloured matter; mucous membrane of small intestine pale throughout, with the exception of a slight arborization at the lower extremity of the ileum; large intestine contains a moderate quantity of feces of a greenish colour; mucous membrane injected, but to a much greater extent in its lower half; the redness appearing in the form of patches and bands; mucous follicles greatly developed and ulcerated; mucous membrane more or less softened.</p>
11	Female.	7 months	<p>Head not examined.</p>	<p>Lungs slightly engorged inferiorly; mucous membrane of trachea and bronchial tubes slightly injected; heart normal.</p>	<p>Liver not in the least engorged; tissue pale; the gall bladder contains a considerable quantity of bile staining the finger Indian-yellow; mucous membrane of stomach pale, except along greater curvature, where it is slightly injected; membrane softened throughout; in the great cul-de-sac the softening extends to all the coats (ramollissement gelatiniform of Cruveilhier); mucous membrane of small intestine pale and of good consistence; the glands of Peyer present their usual appearance, with the exception of two large plaques at the inferior extremity, which are somewhat injected; mucous follicles highly developed at the inferior extremity of the intestine, in a space of about four inches, elsewhere they are scarcely perceptible; the duodenum contains a moderate quantity of orange coloured matter of the consistence of pap; contents of ileum light yellow; jejunum empty, coated with a layer of mucus of moderate thickness; mucous membrane of large intestine softened and coated throughout with a thick layer of mucus; lower half much injected, the inflammation existing in the form of bands of a brick-dust colour; mucous follicles very distinct but not ulcerated; mesenteric glands and other organs healthy.</p>

12 Male.	12 weeks	<p>Veins of pia mater much distended; arachnoid normal; moderate effusion beneath; moderate injection of pia mater confined to the larger vessels; injection of right hemisphere, consistence normal; minute injection of middle and posterior lobes of left hemisphere; consistence of left hemisphere softer than that of right; a tablespoonful of limpid serum in lateral ventricles; slight injection of cortical substance; thalami nerv. optico; and corpora striata normal.</p>	<p>Pleuræ pale, no effusion; lungs crepitant; slight engorgement of lower lobes; no tubercles; mucous membrane of trachea and bronchi pale; heart and pericardium healthy.</p>	<p>Peritoneum pale, no effusion; liver of a reddish-brown colour inferiorly; tissue slightly engorged, not apparently enlarged; gall bladder moderately distended with dark coloured bile of the consistence of syrup, staining the finger a deep orange; <i>spleen</i> of a deep brown colour externally, mottled with patches of a darker hue; consistence firm; kidneys pale red, not engorged; mucous membrane of stomach pale and of good consistence; crypts scarcely visible; small intestine contains a quantity of yellowish matter, of an orange colour in the duodenum and jejunum; mucous membrane softened inferiorly; follicles scarcely visible; plaques of Peyer normal; large intestine contains a quantity of mucus of a grayish colour; mucous glands greatly developed, many of them surrounded by a ring of inflammation, with numerous vessels radiating from them, and insculcating with each other; none of the follicles ulcerated; mucous membrane for the most part pale, with a tinge of pink; consistence of mucous membrane normal; mesenteric glands firm, the largest about six lines in length; bladder healthy.</p>
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ART. III.—*Note on the frequency of the Pulse, and Respiration of the Aged.* By C. W. PENNOCK, M. D.

UNTIL within a few years, the accuracy of the views of Haller in reference to the relative frequency of the pulse in the various periods of life, has been regarded as incontrovertible.

"The pulse,"* says this eminent physiologist, "is a little less frequent in adult age than in youth and in infancy, and the pulse of the aged is rather slower than that of the adult."

"The number of pulsations," says Adelon, in his *Traité de Physiologie*, "is so much the greater in proportion as the individual is young." According to Sæmmering, the pulse beats in a minute from 130 to 140 times in the new-born infant; 120 at one year of age; 110 at two years; 90 at three years; 80 at puberty; 70 at manhood; 60 and *less* in old age.

Müller says that "the frequency of the heart's action gradually diminishes from its commencement to the end of life, thus: in the embryo the number of beats in a minute is 150; just after birth, from 140 to 130; during the first year, from 130 to 115; during the second year, from 115 to 100; during the third year, from 100 to 90; during the seventh year, from 90 to 85; about the fourteenth year, from 85 to 80; in the middle period of life, from 75 to 70; in old age, from 65 to 50."†

Physiologists, generally, have considered it as an established fact that the frequency of the heart's action diminishes in advanced age; and no one had called the correctness of this view in question, until Leuret and Mitivié in 1832, whilst engaged at the Hospital of Salpêtrière, Paris, in observations relative to the pulse of the insane, were astonished to find that the pulse of 34 sane women, in good health, whose medium age was 71 years, presented the average of 79 beats in the minute.‡ §

This fact induced them to make further observations and to institute an inquiry as to the relative frequency of the pulse of the young adult and that of the aged. On the same day, at the same hour, and under analogous circumstances, the pulses of the young men at the veterinary school at Alfort, and those of the old men in good health at the Infirmary at Bicêtre were examined. The number of the veterinary students was 110, that of the aged men 27; the average age of the students was 21 years; that of the aged men was 71 years. The result of this examination proved that the medium pulse of the young men was 65 per minute, whilst that of the aged was 73. Temperature 32° F.

* Haller, Elem. Phys., lib. 6, sect. 2. cap. 16.

† Müller, Elements of Physiology, Am. Ed., p. 183.

‡ De la Fréquence des Pouls, chez les aliénés, par MM. Leuret et Mitivié, p. 35.

§ Thermometer, 7° R. (45° F.)

The investigations of Leuret and Mitivié tended to show that the pulse, instead of becoming slower in old age, is, on the contrary, more frequent in the aged than it is in the young adult. Still, however, the number of individuals examined, being only 61, (34 women and 27 men,) was too limited to deduce any general law as to the frequency of the pulse of the aged, and for its elucidation further investigation was demanded.

Evidence confirmatory of the views of Leuret and Mitivié was offered in 1835 by Drs. Hourmann and Deschambre of Paris,* who re-investigated the subject of the pulsations in connection with that of the respiration of the aged. Their observations were made on 255 females, in good health, between the ages of 60 and 96 years of age, the average age being 74·33 years: these researches were principally made between 6½ A. M. and 7½ A. M., at the temperature of 8° to 9° Reaumur, (46° to 48° Fahrenheit,) soon after the individuals had left their beds and previous to eating. The result of this investigation was as follows: viz., medium age, 74·33 years; medium number of pulsations per minute, 82·29; medium number of respirations per minute, 21·79. The ratio of the frequency of the respiration to that of the pulse as 1 : 3·41.

Regarding the views of the Parisian observers as being highly interesting in a physiological and pathological point of view, during my connection with the Philadelphia Hospital, Blockley, I instituted a series of observations on the pulse and respiration of the aged inmates in the adjoining infirmary, in which I am especially indebted to Drs. Vedder, Jones, McPheters, Burwell, the resident physicians of the hospital, for their aid. The observations were generally made about 11 o'clock, A. M., at least four hours after breakfast, when the individuals whose pulse and respiration were examined were at rest, not excited by previous exercise, and free from all mental excitement. In order to guard against the latter, care was used to familiarize those, who were the objects of observation, to examination of their pulse previous to that of the recorded observation; this precaution was found to be important, inasmuch as at the first interview more or less excitement was frequently evinced. The pulse and respiration were each counted when the individuals were seated, and afterwards when standing; and no interrogatories were addressed to those who were examined previous to the completion of the observation, hoping by this precaution to prevent mental excitement. In addition to the observations made at Blockley, several of my medical friends, in different sections of the union, very kindly favoured me with their own investigations on these points, which are embodied in this communication, and I am especially indebted to Dr. Bowditch of Boston, Dr. McKee of Raleigh, Dr. Cenas of New Orleans, and Dr. Mendenhall of Cincinnati.

Rejecting all observations of individuals in whom any rational or physical

* Archives Générales de Médecine, Nov. 1835, tom. ix. p. 338.

signs of cardiac, pulmonic or other disease existed, the number of persons whose pulse is reported, is one hundred and seventy men, and two hundred and three women, being an aggregate of three hundred and seventy-three; the ages of the men being between 50 and 90 years, those of the women from 50 to 115 years.

The frequency of the respiration does not seem to have claimed that attention from physiologists which it merits; it has been an interesting subject of inquiry in connection with that of the pulse, and the effort has been made to ascertain the ratio of the inspirations to the cardiac contractions.

The following tables (A and B) exhibit the results obtained; they have been carefully deduced from the original observations, and are believed to be accurate.

Table A is derived from the observation of the pulses of 170 men; the aggregate of whose ages is 10,895 and that of the pulsations 12,211. The respirations were counted in 146 instances, the total number of inspirations being 3045.

The medium age is, therefore $\frac{10,895}{170}$ 64·09 years.

The medium pulse, " $\frac{12,211}{170}$ 71·83 per minute.

The medium respiration, $\frac{3045}{146}$ 20·51 "

Ratio of respiration to pulsation, as 1 : 3·51.

Table B is derived from the observation of the pulse of 203 females, the aggregate of whose ages is 14,326, that of their pulses 15,838. The respiration was counted in 143 individuals, and its aggregate is 3154.

The medium age is $\frac{14,326}{203}$ being 70·57 years.

The medium pulse is $\frac{15,838}{203}$ being 78·02 per minute.

The medium respiration is $\frac{3154}{143}$ being 22·06 " "

Ratio of respiration to pulse, as 1 : 3·53.

From the preceding facts it would seem to follow that the medium pulse of the aged men may be stated to be 71·83; that of aged females 78·02 per minute. Whilst the respiration of the former is 20·51, that of the latter is 22·06 per minute.

The ratio of the respiration to the pulse in aged men is as 1 : 3·51.

" " " " " women is as 1 : 3·53.

The idea may be entertained that the frequency of the pulse of the aged, as stated in the preceding tables, may depend upon some accidental instances of extreme frequency, which should be rejected. In order to a proper appreciation of the truth, the tables C and D are presented, in which the individuals examined are grouped agreeably to the frequency of the pulse.

TABLE A.

Average of Pulse and Respiration of Males from 50 to 90 years of Age.

Class of individuals examined.	Number of persons examined.	Average of ages.	Average of height.	FIRST OBSERVATION.				SECOND OBSERVATION.*				GENERAL AVERAGE.						
				Average of atmospheric temperature.	Pulse.		Respiration.		Average of atmospheric temperature.	Pulse.		Respiration.		Pulse.		Respiration.		Ratio of respiration to pulse.
Males between the ages of 50 and 60.	59	53.63	Ft. In. 5 7	73 $\frac{3}{4}$ °	Sitting. 74.41	Standing. 79.77	Sitting. 19.18	Standing. 20.41	75 $\frac{1}{2}$ °	73.67	75.25	Sitting. 19.72	Standing. 21.7	74.04	77.51	Sitting. 19.95	Standing. 21.05	1 : 3.98
Males between the ages of 60 and 70.	58	64.78	5 6 $\frac{1}{2}$	70 $\frac{5}{8}$ °	69.14	75.03	20.02	23.04	71 $\frac{1}{2}$ °	68.95	73.91	20.74	22.58	69.04	74.45	20.38	22.81	1 : 3.44
Males between the ages of 70 and 80.	35	73	5 5 $\frac{3}{8}$	70 $\frac{1}{4}$ °	71.2	76.57	21.67	23.46	70 $\frac{3}{8}$ °	69.67	73.94	21.19	23.09	70.40	75.25	21.41	23.27	1 : 3.28
Males between the ages of 80 and 90.	18	82.33	5 5 $\frac{1}{2}$	68 $\frac{3}{4}$ °	71.66	74.36	22.86	23.33	68 $\frac{1}{4}$ °	73.33	78.25	24.42	25.66	72.49	76.30	23.64	24.49	1 : 3.11

* Unfortunately the second observations were not extended to more than about one-half the whole number of those reported in the first observation.

TABLE B.
Average of Pulse and Respiration of Females from 50 to 115 years of Age.

Class of individuals examined.	Number of persons examined.	Average of ages.	Average of height.	FIRST OBSERVATION.				SECOND OBSERVATION.				GENERAL AVERAGE.					
				Average of atmospheric temperature.	Pulse.		Respiration.		Average of atmospheric temperature.	Pulse.		Respiration.		Pulse.	Respiration.		Ratio of respiration to pulse.
					Sitting.	Standing.	Sitting.	Standing.		Sitting.	Standing.	Sitting.	Standing.		Sitting.	Standing.	
Females between the ages of 50 and 60.	36	55.06	Ft. In. 5 0 $\frac{1}{2}$	75.89	80.92	21.05	22.75	79 $\frac{1}{2}$ °	71.22	77.89	19.22	21.18	73.55	79.40	20.13	21.96	1 : 3.65
Females between the ages of 60 and 70.	68	64.5	4 11 $\frac{1}{2}$	76.72	82.73	21.85	23.84	72 $\frac{3}{4}$ °	73.67	80.34	19.68	21.17	75.19	81.53	20.76	22.5	1 : 3.61
Females between the ages of 70 and 80.	55	74.12	4 11 $\frac{1}{2}$	81.22	90.34	21.41	26.5	72°	75.34	86	21	24	78.28	88.17	21.20	25.25	1 : 3.60
Females between the ages of 80 and 90.	37	83.62	5 0 $\frac{7}{16}$	78.13	81.12	23.24	26.37	74 $\frac{1}{4}$ °	72.57	81.71	20.33	23	75.35	81.41	21.73	24.68	1 : 3.47
Females between the ages of 90 and 115.	7	95.43	—	76.57	80	26	30	71°	—	—	—	—	76.57	80	26	30	1 : 2.92

TABLE C.

Pulse of aged Men.

GROUPS.	No. of Men.	Medium age.	Medium pulsation.	Medium of respiration.	Ratio of respiration to pulse.
Below 60 pulsations,	5	65·4	55·4	21·6	1 : 2·56
From 60 to 70 pulsations,	73	66·59	63·53	20·3	1 : 3·13
“ 70 to 80 “	67	60·67	76·33	20·37	1 : 3·76
“ 80 to 90 “	19	66·36	84·05	21·86	1 : 3·88
“ 90 to 100 “	6	60·00	96·67	20·00	1 : 4·83

From the above (table C) it is very apparent that in above one-half of the aged men, 52 per cent., the pulse ranges from 76 to 84; that in more than one-third, 43 per cent., it is over 63; whilst in about 2 per cent. it averages, say 55; and in rather more than 3 per cent. it is over 96.

TABLE D.

Pulse of aged Females.

GROUPS.	No. of Females.	Medium age.	Medium pulsation.	Medium of respiration.	Ratio of respiration to pulse.
Below 60 pulsations,	5	78·8	56·2	17·	1 : 3·31
From 60 to 70 pulsations,	37	65·06	64·78	20·27	1 : 3·15
“ 70 to 80 “	88	68·4	75·86	21·20	1 : 3·57
“ 80 to 90 “	53	72·21	85·36	22·9	1 : 3·76
“ 90 to 100 “	15	73·2	95·87	24·00	1 : 3·99
Upwards of 100,	5	72·2	104·00	26·34	1 : 3·95

From the above (table D) it is very evident that the pulse of aged females varies from seventy to one hundred and four in nearly four-fifths of the individuals, 79·93 per cent. of those examined; that in more than two-thirds, 69·45 per cent., the range of the pulse was between 75 and 86; that in 7·39 per cent. the pulse was between 95 and 96; that in 2·41 per cent., it was at 104; whilst it was below 70 in but a small number, namely 37, out of 203, being rather less than one-fifth of the whole, or 18·34 per cent.; the pulse was below 60 only in five instances, or in 2·41 per cent. of the whole number.

The results now presented, approximate closely to those of Leuret and Mitivié; thus:

In 27 aged men, reported by them, whose medium age was 71 years, the pulse was 73 per minute.

In 170 aged men of the present series, whose medium age was 64·09 years, the medium pulse is 71·83 per minute, or 1·17 beats more per minute in the series of L. and M. than in this.

In 31 aged women, reported by L. and M., whose medium age was 71 years, the medium pulse was 79.

Present series, 203 women; medium age, 70·57. Pulse, 78·02; difference, ·98.

Upon comparison with the results of Hourmann and Deschambre, a greater disparity is observed, thus:

In 255 aged women reported by H. and D., whose medium age was 74·33, the pulse was 82·29.

In 203 aged women of the present series, the medium age 70·57 years, the medium pulse 78·02; the difference in the frequency of the medium pulse being 4·21 pulsations per minute.

The ratio of the respiration to the pulse in Hourmann and Deschambre's observations on the pulse and respiration of aged females is as 1 : 3·41.

In present series it is as 1 : 3·53.

Messrs. Hourmann and Deschambre, struck with the disparity between their results and those of Leuret and Mitivié, account for it by the fact that the latter observers had excluded from observation all individuals whose pulse exceeded one hundred in frequency. Rejecting all cases where the pulse was below 60 or over 89, which embraced 70 individuals, they present the following result in reference to the 185 aged females who remained, viz:—

The medium age was	74·38 years.
The medium pulse	76·42 per minute.
The medium respiration	20·91 per minute.
Ratio of respiration to pulse	1 : 3·65.

From the preceding facts and researches, it is evident that the frequency of the pulse of the aged is much greater than that usually assigned to it; whilst that of the respiration is equal to that generally admitted in reference to the adult in middle age.

“Generally,” say Hourmann and Deschambre,* “it is in old age that the pulse presents extremes of slowness or of frequency; but the first case is the exception, the second is the rule; the error of past time has been to take the one for the other.”

The writer of this, greatly regrets that he has not had the facilities of examining the pulse, under favourable circumstances, of a large number of the young and healthy adult, in order to verify, or disprove the correctness

* Archives Générales de Médecine, tom. ix. 1835, p. 357.

of the results on that point, as stated by the Parisian observers. It is much to be desired that this problem may soon be resolved; the large classes of young men belonging to our medical schools offer an ample field for this investigation, and the surgeons of our army and navy have also great facilities presented to them for this purpose.

ART. IV.—*Hydrotherapy, or the use of Cold Water for the Prevention and Cure of Disease.* By SAM. KNEELAND, JR., M. D., of Boston.

A SILESIAN peasant has of late years filled the continent of Europe with the report of his wonderful cures by the use of cold water externally and internally, assisted by pure air, simple diet, and exercise. The medical world has now become quite surfeited with the marvels of hydrotherapy, the twin brother of homœopathy, emigrants both from the land of mystic Germany, which has been so aptly called “la terre des miracles, la patrie des hallucines.”

It is difficult to understand the action of water, apart from its temperature; though its therapeutic effect is not due to the mere abstraction, or giving of caloric. At common temperatures water allays thirst, moderates heat, and increases the secretions, and can be made a most valuable auxiliary to medicine, if mankind can be induced to abandon the complicated and the far-fetched, and set their proper value on the simple, ever present, gifts of nature.

What stronger proof can we have of the bodily degeneracy of the human race, than the long lists of *drugs* on which, at the present day, such peculiar stress is laid? In early ages, the simple diseases of man were successfully treated by simple remedies, which nature seemed to indicate, everywhere easily obtained and bountifully supplied. With the progress of civilization diseases became more complex, and seemed to require a corresponding medication; artificial remedies were required for an artificial, unnatural state of the system. Instead of leading man back to the forsaken paths of nature, physicians have preferred the easier plan of ministering to this altered condition by the ingenious and stupendous system of modern therapeutics. Good will have resulted from the short lived creation of Hahnemann, if it has any effect in diminishing the enormous doses in which drugs have been administered; so the vogue which has been recently given to the use of water, and the common principles of hygiene, by the “peasant of Gräfenberg,” may do something to simplify the therapeutics of the nineteenth century by a more extended use of nature’s gifts.

There is no part of medicine more deserving of careful study, and at the same time more neglected at the present day, than the history of

therapeutics. To this neglect may be attributed the frequent revival of old medicines, and their use for a time as new ones, till sad experience, or a casual glance at an old author, has revealed the wolf in sheep's clothing, or an old friend with a new face. We shall, therefore, give a historical sketch of the therapeutic use of water, as briefly as possible, and as complete as the authors we have been able to consult will allow. Besides showing that the moderns have not much improved upon the practice of antiquity in the use of water, this will be interesting in tracing the influence of different medical theories upon the employment of this powerful agent.

Passing over the earliest nations, who all acknowledged by their customs the truth of the expression of Pindar, "ἀριστον μὲν ὕδωρ," we will pass at once to the father of medicine (B. C. 460). Hippocrates was well acquainted with the use of water both in health and disease, and has clearly expressed when it is beneficial and when hurtful; see his aphorisms (sects. 5, 17, 18, 20, 21, 23, 24, 25), and his works generally. During the next three centuries cold water was extensively used, especially in fevers. Asclepiades (B. C. 90) was surnamed the "cold bather" from his zeal for cold water; the cure of Augustus Cæsar by Musa is familiar to all.

Celsus (B. C. 60) speaks of its employment in a great variety of diseases. We can only refer to his 1st book, sects. 3, 4, 5, 9; 2d book, sect. 17. In book 3d, sect. 9, there is a curious passage, almost identical with a favourite proceeding of Priessnitz, in which he describes a practice which even then was not new; he says, "Si quidem apud antiquos quoque ante Herophilum et Erasistratum, maximeque post Hippocratem fuit Petro quidam, qui febricitantem hominem ubi acceperat, multis vestimentis operiebat, ut simul calorem ingentem sitimque excitaret. Deinde, ubi paulum remitti cæperat febris, *aquam frigidam* potui dabat; ac si moverat sudorem explicuisse se ægrum judicabat."

Aretæus (A. D. 90) advises cold water in various diseases of the brain. Galen (2d century) made most frequent use of cold water in disease; humoralist as he was, he supposed it to act as a solvent and refrigerant: he is particular to mention the contra-indications; he also says "maxima vera continentum febrium remedia hæc duo sunt, venæsectio et *potio frigida*." Cælius Aurelianus, Alexander Trallianus, Ætius, and Paulus Ægineta (in the 5th, 6th and 7th centuries), extended its use to a great variety of diseases. It is worthy of remark that its use was mostly confined to acute diseases and burning fevers; it was rarely employed in chronic affections.

The Arabians, notwithstanding the strict language of the Koran, paid little attention to its therapeutic use, being carried away by their zeal for chemical preparations. Still Rhazes and Avicenna, in the 9th and 10th centuries, recommend its use very strongly in fevers.

Passing over the middle ages, Savoranola (in the 15th century), and Paracelsus, and Mercurialis (in the 16th), were great partizans of cold

water. Van der Heyden, in 1649, was the first who reduced the practice to a system in his "*Arthritifugum Magnum*," in which he says, there is no better preservative from gout, or anything more efficacious in relieving the pains, than cold water. In the 18th century, Sir John Floyer and Dr. Baynard were warm advocates of cold water; with the former it began to be used in chronic affections. A few years later, Frederic Hoffman published a curious work, "*De Aqua Medicina Universali*;" he supposes water to preserve the body supple, and to prevent an excess of friction in its various parts. Dr. T. Sigismund Hahn, of Silesia, used water in almost every disease; but his most striking success was in an epidemic of typhus which raged in Breslau in 1737; the great majority of those treated by cold ablutions recovered, while those who did not submit to this treatment almost all died. De Moneta, of Warsaw, employed cold water in commencing thoracic inflammation, from a theory that catarrhal affections originate from a sudden transition, from *cold to warm*; he began his experiments on himself, and finally applied the cold water even to the catarrhs of old men and infants.

In Italy, the cold water treatment was carried to a ridiculous extreme. Cyrillo, of Naples, wrote a memoir on the subject which is inserted in the *Philosophical Transactions* (1729-30), to which we refer for many curious details. From the opposition of Vallisnieri it fell into disuse, till Giannini recalled attention to the subject by his work on fevers, (Milan, 1805,) in which he concludes that the most efficient remedy is the cold immersion.

Dr. Currie (*Medical Reports*) speaks highly of the cold affusion in typhus, the exanthemata, &c., paying particular attention to the heat of the patient as indicated by the thermometer. We shall allude to many eminent English and French authors, when treating of particular diseases.

In surgery, water has been used from the earliest antiquity. In military surgery it will ever be the remedy most to be depended on. Baron Percy says, "Sydenham asserted that he would renounce the practice of medicine, if opium was taken away from him. For my part, I would abandon the surgery of armies, if I was forbidden the use of water." He treated complicated fractures by continual irrigation with cold water; yet two eminent French surgeons, years after, disputed the claim of having first applied what had been so successfully practised by him and his predecessors.

Medicine has been but little benefitted by all this accumulated experience, as each one had his peculiar form of administration, according to his theory of disease, or individual preference.

To comprehend the extent to which water may be applied in disease requires a slight digression on physiology.

In the *Revue Médicale* (1826), appeared an article by Pelletan on animal heat, of which we shall give an analysis, as it has a direct bearing on our subject. His object is to show that "organic activity is in proportion to

the intensity of the currents of caloric which traverse the organs ; and that the rapidity of these currents may be increased by the subtraction of caloric, as well as by its production in excess, provided the internal source be sufficient."

So intimately connected with our idea of life is animal heat, that vitality and vital heat are nearly synonymous. This heat is not to be measured by the thermometer, as many very active animals have a comparatively low temperature ; it is the result of the proportion existing between the acquisitions and losses of caloric, these alternations necessarily producing currents through the different organs. An organ may be the seat of currents of caloric independently of its temperature ; this he shows by examples from natural philosophy, and particularly by galvanic and electrical phenomena. Our organs are peculiarly sensible to the passage of caloric through them ;—from the impression produced by plunging the hand in water, he infers that the internal organs are similarly affected ; this impression is not proportioned to the water's temperature, but to the difference between this temperature and that of the hand.

Man is continually the seat of currents of caloric ; he has a source of heat in his respiration ; he loses heat by contact with external objects, and by perspiration ; his circulation carries the heat to every part of his system ; his body is heated from within, and cooled from without, giving rise to continual currents whose activity depends on the rapidity of production and transmission. Another cause of these currents is the different temperatures of the arterial and venous blood. The vital phenomena and the organic energy seem to be in proportion to the rapidity of the currents, rather than to the temperature. A warm blooded animal cannot long support immersion, in a liquid of its own temperature, although it have the pulmonary transpiration free as a means of losing heat ;—in fever and inflammation the temperature may be little, if at all raised, yet the sources of calorification are increased, transmissions are more rapid, and the losses therefore greater ; hence more rapid currents of caloric. These principles will account for many otherwise inexplicable or anomalous vital phenomena ; they explain the tonic effect of the cold bath, as the currents are more rapid from within outwards from the momentary cooling of the surface. The apparent contradiction of the sedative effects of cold long applied is explained by the circulation, which keeps up the currents, becoming slower ; a great number of affections commonly attributed to a suppression of the transpiration depend, on the contrary, on causes which have rendered it more active, as exposure to a current of air. After rubbing the feet with snow and while the snow is in actual contact, there is a feeling of heat, and redness, (although by the thermometer the temperature is quite low,) from the currents of caloric towards the cooled point—finally many aberrations of animal heat, not accounted for by the thermometer, and hitherto considered independent of the common laws of physics, seem to enter naturally under these laws, if we admit the above theory.

This theory is but another expression of what Liebig has successfully maintained in his "Organic Chemistry applied to Physiology and Pathology."

The necessary conditions of animal life are the assimilation of food, and a continual absorption of oxygen from the atmosphere; and all vital activity arises from the action of oxygen on the elements of the food. According to Lavoisier, an adult receives annually into his system from the atmosphere 746 lbs. of oxygen, which is again given out as carbonic acid and watery vapour, the requisite carbon and hydrogen being supplied by the food; the amount of food required must be in a direct ratio to the amount of oxygen taken into the system by respiration. Says Liebig:—"The mutual action between the elements of the food and the oxygen conveyed by the circulation of the blood to every part of the body is the source of animal heat." "The cooling of the body, by whatever cause it may be produced, increases the amount of food necessary. The mere exposure to the open air, in a carriage or on the deck of a ship, by increasing radiation and vaporization, increases the loss of heat, and compels us to eat more than usual. The same is true of those who are accustomed to drink large quantities of cold water, which is given off at the temperature of the body, 98°.5. It increases the appetite, and persons of weak constitution find it necessary, by continued exercise, to supply to the system the oxygen required to restore the heat abstracted by the cold water." But as there is a more or less rapid change of matter continually going on by two opposite processes, alternate waste and reproduction, this increased appetite implies increased waste, increased rapidity of transformation, or increased vital activity. The abstraction of heat, then, accelerates the change of matter, if there be a full supply of food and oxygen.

If health consists in an equilibrium between the causes of waste (chemical action of oxygen) and those of supply (vital force manifested by a temperature peculiar to each organism), disease must consist in a disturbance of this equilibrium. "A diseased condition once established in any part of the body, cannot be made to disappear by the chemical action of any remedy,"—the only way is to increase the resistance of the vital force. This may be done by the proper use of cold water, "by exalting and accelerating the change of matter." Cold water applied to the surface promotes the union of morbid matters with oxygen, and their expulsion from the body. Continues Liebig:—"Let us now suppose that the heat is abstracted from the whole surface of the body; in this case the whole action of the oxygen will be directed to the skin, and in a short time the change of matter must increase throughout the body. Fat, and all such matters as are capable of combining with oxygen, which is brought to them in larger quantity than usual, will be expelled from the body in the form of oxydized compounds."

The physiological effects of cold water vary according to its temperature, the duration of its application, and the patient's strength.

The thermometric temperature of the water is not a sure criterion. Water at the temperature of the air is sedative to the healthy body; but apply the same to the skin when excited and covered with perspiration, and the effects are the same as would be produced on a natural skin by a more intense cold—the temperature becomes relatively lower: such are also the different effects of a cold drink on a person in health, and on one in a raging fever. The general effect of cold is to diminish the size of bodies; when applied to the surface of the human body it contracts the skin, expels the fluids from the circumference to the centre; it suppresses the cutaneous transpiration, and increases the intestinal and renal secretions, and the pulmonary transpiration. By diminishing the calibre of the peripheral vessels, it drives the blood to the brain, as shown by the fact that in men and animals frozen to death the cerebral vessels are found gorged with blood; in this way have been explained the long sleep and comatose affections of northern countries; and the violent headaches to which, according to Linnæus, the Laplanders are subject.

Cold water applied to the surface, or to the mucous membranes, is a tonic, in the true meaning of that word; it causes a constriction of the fibres, diminishing or effacing the cellular and vascular interstices. As caloric is the most powerful of stimulants, cold is the most powerful sedative; it opposes and depresses vital activity and reaction in the most direct and simple manner, as it causes a suppression, more or less considerable, of the action of vital heat, a condition necessary to the continuance of life. It renders the system less susceptible to the action of stimuli, and finally deadens it completely; it strikes with torpor and inertia the muscular and nervous apparatus; in excess "it destroys life by suspending the phenomena of vital affinity by congelation, as excess of caloric does by combustion."

Cold water when applied suddenly, or for a short time, causes phenomena completely opposite to the anti-vital ones just enumerated. Almost immediately after the painful sensation of concentration is felt, an eccentric movement takes place; the circulation is accelerated; the strength is increased; there is more heat, redness, and turgescence; in a word, a veritable febrile paroxysm. This series of phenomena has been called reaction, and is a manifestation of what, within proper limits, is the "*vis medicatrix naturæ*."

It may be worthy of notice in this connection, that all sedatives of the circulation are diuretics, and vice versâ; this must be something more than a mere coincidence. The opposite fact is equally striking, viz., that all causes which increase the circulation, calorification, and the cutaneous secretion, diminish the quantity of the urine.

Other physiological considerations will find a more appropriate place

when treating of the effects of the different methods of administering water.

We would not make of water a universal remedy as does Priessnitz, but we would place the use of that agent upon a physiological foundation, and show the advantage of combining it in suitable cases with other remedial means.

We call this system "hydrotherapy," as infinitely preferable to "hydropathy," which means nothing, and to "hydrosudopathy," which indicates only one of its principal methods. What is hydrotherapy?—It is to restore the diseased body to a healthy condition by the external and internal use of cold water, with a strict observance of the rules of hygiene. Scoutetten* defines it a "method whose aim is to preserve the health, or aid in its re-establishment, by making use, in a methodical manner, of water, and the principal means of hygiene." Dr. Johnson† says that "when taken with all its adjuncts, it is an *artificial primitive condition* to which the sick man *temporarily* submits himself for a temporary purpose, viz., that of giving nature, assisted by art, a fair opportunity of healing his diseases."

Priessnitz is a humoral pathologist; he believes that the essence of all diseases is an undue accumulation of substances improper for nutrition—that the elimination of these is sufficient to re-establish the harmony of the functions—and that this is best effected by the skin. The skin being his principal outlet for the "bad stuff," as he calls it, his object is to open the pores, and facilitate its exit by the frequent application of cold water; the reaction and derivation caused by this, increases its functions, and favours any critical evacuation. Frequent and copious draughts of water, and sweating in a blanket or wet sheet, set the "bad stuff" in motion towards the skin. Not knowing that internal congestions may be caused by the external application of cold water, he must frequently make fatal mistakes. Dr. Graham‡ says that every death at Graefenberg, which came under his notice, was caused by internal congestion, and not by the disease; and this the most enthusiastic followers of Priessnitz cannot disprove.

We shall describe the methods of applying cold water externally, in the following order: 1. the cold bath, general and partial; 2. the cold bath after sweating—cold affusion; 3. the douche, shower-bath, &c.; 4. the wet sheet and wet compresses; 5. sponging, washing, lotions; 6. ice.

I. THE COLD BATH.—This may be subdivided into the *temperate* and the strictly *cold* bath; the former is purely *hygienic*, the latter is a *thera-*

* De l'eau, sous le rapport hygiénique et medical. Par H. Scoutetten, M. D. Paris, 1843.

† Hydropathy, by Edward Johnson, M. D. London, 1843.

‡ Graefenberg; or, a true report of the Water Cure. By R. H. Graham, M. D. London, 1844.

peutic agent. The thermometer is not a proper index of the effects of a cold bath, as the sensations produced by water of a certain temperature will vary according to the sensibility of different individuals.

The respiration is much less influenced by the temperature of the bath than the circulation. According to M. Gerdy, (*Sur l'influence du froid*, Paris, 1830,) simple baths from 90° to 94° F., render the excited circulation slower, and restore the pulse to its natural calmness, without reducing it lower;—above and below this point they excite the circulation. Below 90° F., reaction often increases the pulse, while the respiration becomes slower. At ordinary temperatures there is but little reaction, and consequently the good effects of the temperate bath are not owing to this; the mere abstraction of caloric, its immediate effect, gives a tone to the muscles, diminishes the perspiration and the weakness attendant on its excess, and acts as a general tonic.

If the temperate bath did nothing but cleanse the skin, it would be invaluable as a preservative of health. A glance at the elaborate nervous and vascular apparatus and great extent of the skin, must show that it is destined to perform a very important part in the animal economy; and whatever this be, frequent ablution is proper and necessary to promote it. This is universally admitted in the treatment of domestic animals.

The skin is an important assistant organ of respiration; experiments prove that the breath and the cutaneous exhalation are composed of the same elements. Dr. Holland says that a function analogous to respiration is carried on by the skin, and that the quantity of carbon eliminated from the blood may be considerably increased through this channel. Liebig remarks, “from the first moment that the functions of the *lungs* or of the *skin* are interrupted or disturbed, compounds rich in carbon appear in the urine.” Another important office of the skin is the absorption of oxygen; “Over the whole surface of the body,” says Liebig, “oxygen is absorbed, and combines with all the substances which offer no resistance to it.”

Besides its cleansing properties, the temperate bath is useful when the system is oppressed by heat, and the sensation is from the first agreeable, when no natural or morbid secretion is in danger of being suppressed: those subject to pulmonary and rheumatic affections should avoid the second shivering, succeeding the one felt on entering the water. If the bath be taken merely to refresh, exercise and consequent reaction should be avoided. It has been recommended in diseases of irregular nervous action, as hysteria, chorea, epilepsy, &c.—If, as some maintain, Bright's disease may be often traced to interruption of the sensible or insensible perspiration, the temperate bath will be useful in securing the healthy action of the skin.

M. Begin (*Nouveaux Elémens d'Hygiène*, par Ch. Londe, Paris, 1838,

tom. ii., p. 449) gives the following account of his sensations on plunging into water between 70° and 60° F., in the middle of October. At the instant of plunging he had a sensation of repulsion of the fluids towards the great cavities; the respiration was panting and rapid; the pulse hard and small,—in two or three minutes the skin became warm, the chest dilated; the pulse became full and strong; muscular action strong and easy,—soon the body became vividly red, with an agreeable sensation of heat; he seemed to swim in water of 100° to 110° F., which offered no resistance to his vigorous strokes,—this state of preternatural vigour lasted about fifteen or twenty minutes, when a chilling sensation was felt; on leaving the water he hardly felt the rough towels with which he wiped himself.

The temperature of the bath should be from 50° to 46° F., and lower if possible; the body soon gets accustomed to this, and reaction does not properly follow unless the temperature be gradually lowered. Reaction is proportioned to the coldness of the water, and (*cæteris paribus*) is slower in proportion to the strength of the individual; a weak person might die of cold in a bath not cold enough to cause reaction. The weaker the person the colder should be the bath, and the shorter its duration; this rule is not absolute, as the calorific power is not the same in persons of apparently similar strength. In nervous and irritable persons it should be applied at first comparatively warm, and gradually made colder, that the calorific power may be increased in proportion.

It may be well to state the proper manner of taking a *therapeutic* cold bath, i. e., below 50° F. It should be taken on an *empty stomach*, before breakfast or dinner,—the patient should not *feel cold* before using it; if he do, he should take *moderate* exercise enough to remove this sensation, though the circulation and respiration ought not to be hurried at the moment of entering,—after wetting the head and shoulders, to prevent cerebral congestion, the body should be *quickly* and *completely* immersed, including the head, that there may be no partial refrigeration. The maximum duration should be ten minutes; for most persons five will suffice; when very cold two or three minutes should be the maximum,—if longer continued, reaction may not take place at all, and dangerous congestions may ensue; or it may be excessive, and cause grave internal inflammation. Reaction is rendered more speedy and complete by frictions of the various parts of the body,—the *second* shivering, (i. e., after reaction,) should be carefully avoided.

From Dr. Herpin's (*Gazette Médicale*, Paris, March, April, May, 1844) experiments, (in the Arne, in the Canton of Geneva,) it appears that a thermometer placed between the thighs, after immersion and wiping, descended to 77°, and even 72° F., where it remained for about a minute, —he felt cramps from excessive organic and muscular contraction,—the radial pulse was imperceptible, though the beatings of the heart were

increased by 8 to 24 pulsations, immediately after leaving the water; in less than five minutes it was normal in frequency, but weak.

According to Dr. Forbes, (*Cyclopedia of Practical Medicine*), the cold bath (below 88° F.) is used to produce the shock, the refrigeration, and the reaction. The shock is produced by the sudden and short application of water at a low temperature; for example, in a swoon, in hysteric and convulsive diseases—it should be avoided where refrigeration and reaction (which almost always result) would be injurious. The continued application of water at a moderate temperature will cause refrigeration, without shock or reaction; employed in fevers, where the heat is steadily above the natural standard, reaction is in proportion to the coldness of the water, the suddenness and force of its application, and the vigour of the individual.

The cold bath renders the skin less sensible to cold: Edwards has shown that the system can produce more heat in winter than in summer; the daily use of cold water will enable it to do the same, and protect the body against sudden changes, the source of so many catarrhs, rheumatisms, gouty paroxysms, &c. Bruce, the traveler, says that it is an erroneous opinion that the cold bath is strengthening in very warm climates; as, when heated by violent exercise he found himself much more refreshed by the warm bath,—this may be true for persons heated by violent exercise; but the warm bath would only increase the feebleness caused by a too heated atmosphere. Any one may convince himself that the cold bath renders the body capable of greater exertion, by comparing his running or leaping before and after it. M. Trousseau, speaking of the restoration of the cold hands, feet, and skin, of nervous people to the normal temperature by the use of the cold bath, says “at the same time that the skin ceases to be sensible to the action of cold, the viscera cease to suffer sympathetically from this sensation, doubtless because the skin has taken on the habit of a more energetic reaction. Consequently, those who before took cold on the slightest exposure, or experienced a diarrhœa and other accidents, can now brave with impunity the inclemencies of the weather.”—(*Traité de Therapeutique*, Paris, 1841. Art. Froid.)

The very cold bath is improper for infants, on account of their extreme sensibility; for the aged the bath should be moderate, and of short duration, on account of the less activity of their calorific powers. It should not be continued in a weak and debilitated patient, if the reaction becomes less each day, lest complete exhaustion or fatal congestion ensue. It is the common opinion that it is safest to go quite *cool* into the water, and that the slightest *heat from exercise* should be carefully avoided. On this point Dr. Currie (*Medical Reports*, London, 1814, pp. 111, 112, 113) remarks: “In the earlier stages of exercise, before profuse perspiration has dissipated the heat, and fatigue debilitated the living power, nothing is more safe, according to my experience, than the cold bath. But nothing

is more dangerous than this practice after exercise has produced profuse sweating, and terminated in languor and fatigue. Because, the heat is not only sinking rapidly, but the system parts more easily with that which remains." The cold bath ought generally to be suspended during the menstrual periods.

We shall notice now the principal diseases in which the cold bath has been recommended.

It is particularly useful in nervous affections, in mania, chorea, hysteria, &c.; it diminishes the nervous exaltation, and gives tone to the digestive organs. It is an excellent prophylactic in scrofula; it seems to change, as it were, the lymphatic into the sanguine temperament, increasing the activity of the capillary circulation. There is no better tonic in general debility, uncomplicated with organic lesions. As will be seen hereafter, it is of great advantage in commencing rickets, giving solidity to the bones, and amending the general health. Many fear to apply it in the exanthemata, dreading the retrocession of the eruption; but the *fears of theory* should yield to the *facts of practice*. Giannini strongly urges cold immersion in measles, and says that the eruption goes through its periods with unusual mildness; Guersent maintains the same in scarlatina; Currie has used it in variola, considering it a highly *stimulating* application, and calculated rather to favour, than ~~repel~~, the eruption. It is of very great service in irregular, insufficient menstrual discharges, complicated or not with chlorosis; in metritis, with or without leucorrhœa; in prolapsus uteri; and in chlorosis, together with martial preparations.

The long continued use of the cold bath is contra-indicated when there are visceral obstructions, or tendency to internal congestions. It should be especially avoided in affections of the heart, which would be much aggravated by the efforts to overcome the resistance of the cutaneous circulation. In fevers, when the heat is steadily above 98° F. with dry skin, it is advantageous; but when there is a tendency to perspiration, or a sense of chilliness, it is of doubtful utility, if not positively injurious.

The principal forms of the *partial* cold bath are the half-bath, the hip-bath, and the foot-bath; the hand, head, and eye-bath will not require special notice.

What is the action of the *partial* application of cold water? here again the views of Liebig come to our assistance. Diseased conditions are often removed by exciting an artificial diseased state, as by a blister or sinapism; "thus diminishing by means of artificial disturbance the resistance offered by the vital force to the external causes of change in these parts,—where this is unavailing, the physician diminishes the number of the carriers of oxygen by bloodletting." By the partial application of cold water, heat is lost, and there is an accelerated change of matter in the *cooled part*; the resistance to the action of oxygen is here the *weakest*, which is equivalent to *increased* resistance in the other parts—"the whole action of the inspired

oxygen is exerted on the cooled part." Dr. Johnson (*op cit.*), who has paid considerable attention to this point, remarks: "Now let us suppose an inflammation to exist in some organ in the upper half of the body, in the brain or lungs. In whichever organ it be, in that organ the force of oxygen is predominant over the vital force;" if the lower half of the body be plunged into cold water, and there kept till the "*resistance* offered by the vital force to the force of oxygen becomes *still weaker* than it is in the *diseased part*, the force of oxygen is diverted from the *diseased part*, in order to attack those *other parts* in which it meets the least resistance. Thus by the judicious use of cold water alone, *all the good* effects of blistering and bleeding are most readily and certainly produced without any of the *bad* effects."

The half-bath is employed when the cold bath is beyond the patient's strength, and in order to accustom him to the latter, and as a revulsive and excitant. Between 44° and 50° F., fifteen minutes is the maximum duration; the water should not reach above the umbilicus; its action should be aided by friction; this is a powerful revulsive. If the tub be closed above, and the upper parts of the body be warmly covered, it becomes a powerful excitant, causing a veritable febrile paroxysm. Dr. Currie speaks of its good effect in hemoptysis "by immersing the body up to the pubes in cold water, a practice that I can speak of from experience as often safe and efficacious in this disease." It is also useful in retention and incontinence of urine.

The hip-bath differs from the preceding, in that the lower extremities are not immersed in the water; hence its principal action is on the lower abdominal viscera and the genital organs.

The water (in a wooden tub, for metal is too good a conductor of caloric) should not quite reach the umbilicus; the other parts of the body should be well covered; it should not be used towards night, if nocturnal excitement of the genital organs is to be feared; its duration is from ten minutes to three hours, according to the desired effect. It is of benefit by its revulsive action in cerebral congestions, aided by cold applications to the head; in various affections of the organs of generation; in sanguineous discharges from the abdominal viscera.

There are three kinds of foot-bath; in the first, the water reaches to the knees; in the second, to the ankles; in the third, the sole only is immersed. The first is used as a revulsive; at a higher temperature to calm inflammatory symptoms, old cutaneous eruptions, ulcers, fistulæ, rheumatic and other pains, are benefitted by remaining in water of 60° to 62° F., for an hour or two. The second, the pediluvium, is also a revulsive or sedative according to its temperature. The third, when the water is very cold, is the most active of all; it causes a painful sensation which can rarely be borne more than five minutes. Pediluvia at a low temperature may be substituted with advantage in cases where the warm foot-bath is generally employed. At a moderate temperature, and long continued, they are much

used to prevent inflammation after sprains, &c.; if too cold, reaction would render the inflammation more violent. They are of service in hemorrhage, whether from the thoracic or abdominal viscera. Are they proper in gout? If a gouty foot be plunged into cold water, a most painful sensation is often felt; if reaction takes place, the evil is increased; that *moderate cold constantly* applied, *without reaction*, would be useful none will deny, but as there is difficulty in this application, and danger of causing metastasis to the internal organs, it is more prudent, and perhaps quite as effectual, to use the *tepid* bath. As a general rule the cold foot-bath is contra-indicated during the menstrual periods, in copious perspiration, hemorrhoidal and other chronic discharges, and in thoracic inflammations; the exceptions to this rule will be mentioned hereafter.

II. THE COLD BATH AFTER SWEATING.—Completely opposite opinions prevail as to the propriety of this bath. It is said, on the one hand, that to expose the body reeking with perspiration to the action of cold water is the height of rashness; while, on the other hand, it is confidently asserted that it is not only harmless, but advantageous. Both these opinions are founded in truth, but the former is apt to be the opinion of the careless observer, convinced by the frequently fatal consequences of the cold bath, or the ingestion of cold fluids, after violent exercise in midsummer. As these phenomena are foreign to our purpose, we shall not attempt their explanation, nor the similar dangerous effects of cold water applied to the body perspiring from the action of stimulant diaphoretics.

That it is perfectly safe to plunge into cold water when the body is perspiring from mere atmospherical or artificial heat, is proved by the customs of many nations; the Russian, and the North American Indian, plunge into the icy river with impunity, after they have been heated in their rude vapour baths. Priessnitz envelops his patient with blankets and feather beds, instead of putting him in a vapour bath; when the sweat breaks out, fresh air is admitted into the room, and the patient is freely supplied with cold water to drink; after remaining in this state often two or three hours, he is led to the cold bath. If the patient be very irritable, he is first wrapped in a wet sheet and then enveloped as before; the first sensation of cold lasts about ten minutes when the heat of the body changes the cold wet sheet into a universal fomentation, the sheet becomes dry in about an hour, when the perspiration breaks forth.

These are never failing methods of exciting the skin; they are superior to the Russian vapour bath, as they leave quiet the organs of respiration by allowing the patient to breathe the fresh air; avoiding by means of cool air and drinks, cerebral and thoracic congestions. This process renders the skin red and hot from the accumulation of blood; the fluids lost are constantly supplied by cold drinks, a surplus of animal heat is also accumulated, which enables the system the better to endure the cold bath. The sudden immersion in cold water deprives the skin of its excess of caloric,

and repels the fluids towards the centre of the body; but soon reaction takes place, and the blood is again brought to the surface, causing a sensation of warmth, increasing the capillary circulation, and giving tone to the muscular and nervous systems.

In order to comprehend the full power of the sudorific process it will be well to say a few words on *perspiration*.

There is continually going on from the surface of the body an exhalation by evaporation, a purely physical process, entirely independent of life; this evaporation requires an atmosphere not saturated with moisture, and is active in proportion to the heat, dryness, and motion of this atmosphere; it persists equally well after death, and continues after the suppression of the real perspiration; it is not of this that we shall here speak. Perspiration, properly so called, is a vital process of secretion, and therefore influenced by the laws of animal life; it takes place either as an invisible vapour, the *insensible* perspiration; or it is condensed into the form of *sweat*, from its abundance or certain external conditions. The true perspiration is secreted by a glandular parenchyma in the dermis in the form of sacs, and is poured on the surface by spiral ducts opening very obliquely under the scales of the epidermis; the "diapnogenous apparatus" of Breschet. The normal amount of this secretion is, according to Lavoisier and Seguin, one pound fourteen ounces in the twenty-four hours; in old age it is somewhat less.

What is the function of these glands? According to the best authorities, "the dissipation, in the form of vapour, of a portion of the watery element of the blood." Why this dissipation of the watery element of the blood? The following is the ingenious explanation of Dr. Willis (*London Medical Gazette*, April, 1844): nutrition and secretion take place by the *transudation* of the nutrient element of the blood through the vessels in every part of the body; this transuded fluid re-enters the circulation by *endosmosis*, which implies the mediate contact of fluids of *different* densities. "This securing of a greater density in the returning current than in the outgoing current of the circulating fluid, I find in the exhaling function of the skin." The natural supposition that the venous blood would be more dense than the arterial blood by the amount of watery fluid lost in the peripheral circulation, is supported by the experiments of Dr. Davy and others, (which show the density of venous blood to be 1·053, of arterial blood 1·050: the density of the serum of venous blood to be 1·026, of arterial blood 1·022); hence, whenever the peripheral circulation is increased, "a greater action of these glands is necessary to secure the return into the venous system of the plasma, or nutrient fluid, which is transuding the capillary arteries in unusual quantity."

It would naturally be supposed that the suppression of a secretion, amounting daily to twenty-four or thirty ounces, would be a powerful cause of disease; and we have a long list of catarrhs, rheumatic affections, fevers,

inflammations, effusions into the serous cavities and cellular membrane, &c., as the consequences of its diminution or suppression. M. Fourcault (in a paper read before the French Academy of Sciences, in 1838) has given some interesting experiments, showing the effects of stopping the transpiration by tar, varnish, or glue applied to the skin of animals; when the whole surface was thus excluded from the air, he produced acute inflammations, congestions, and death; when a part only was covered, he caused partial inflammations, chronic irritations, &c.

What are the effects of perspiration on the system? The most evident is a great loss of watery fluid; by the method of Priessnitz this is really enormous. Dr. Hallman (*Archives de Médecine*, March, 1844) has given some experiments showing the amount lost by a patient by this method. A man, æt. 30, was under that treatment six months; he was enveloped at four A. M. for three hours and three quarters, and at four P. M. for two hours and a half; he was weighed, naked, before and after each process; during them he did not urinate, but drank a known weight of water which must be added to the loss by perspiration in order to obtain the true loss; the experiments were made in August, 1842; the average is taken. In the morning, before the experiment, he weighed $133\frac{4}{5}$ Troy lbs.; after it, 131 lbs.; drank 3 oz.; total loss about 3 lbs.; in the afternoon, before experiment, he weighed 136 lbs.; after it, $132\frac{1}{2}$ lbs.; drank 5 oz.; total loss nearly 4 lbs.; the sum of both about 7 lbs. This must be divided between the skin and the lungs; according to Lavoisier and Seguin 11 parts belong to the skin and 7 to the lungs, then $4\frac{1}{3}$ lbs. were lost by the skin, and $2\frac{2}{3}$ lbs. by the lungs; this is four times the normal quantity lost in this month. By such a loss of fluids, the body loses a greater amount of carbon and hydrogen, which can only be supplied by a greater amount of food; hence the increased appetite of those under this process, in other words, the change of matter is accelerated, waste and nutrition are increased by this process assisted by cold water, proper food, and exercise; thus the old fluids are gradually supplied by new ones, and the whole organism, as it were, regenerated. It also increases the tendency of morbid matters to combine with oxygen, and facilitates their escape by the skin.

Perspiration is a cooling process, opposing the heating influence of increased arterial action. Dr. Currie remarks, "as in respiration a gas is constantly converted into a solid or fluid, and thus heat evolved, so in perspiration a fluid is continually converted into a vapour, and thus heat is absorbed." The mere flow of perspiration does not cool, there is necessary an antecedent vital act which shall direct the reaction to the surface; thus we see at the end of the hot stage of an intermittent the sensation of heat diminished before the *sweating* stage has fairly commenced, before even a drop of perspiration has made its appearance, and in some intermittents there is no sweating stage.

A very common effect of the sweating process is the appearance of ab-

scesses and furunculi on the surface of the body ; this brings us to the so called "*crisis*" of the water cure. By "*crisis*" we do not mean here the papular, or even pustular cutaneous eruptions which may be caused in any one by exciting the skin by heating applications, by increasing its nutrition by a sudden change in the habits, &c. ; this is the *false* crisis, of which we do not speak, though it is probably very frequently the crisis of the water cure.

During the reign of solidism, many were the sneers against the doctrine of crisis and critical days, and such are not uncommon even now.

When disease is left to itself, nature always make an effort to get rid of it ; there is a continual struggle between the organism and the morbid matter. The removal of deleterious principles is generally effected by the skin, kidneys, and mucous membranes. In diseases having a "*materies morbi*" to be expelled, if nature get the mastery, the morbid matter is eliminated with the concurrence of certain functional troubles, causing a "*critical disease* ;" in the exanthemata, the fever arising from the struggle is a *critical disease*. But this is not exactly a *crisis* ; in the course of the same diseases, nature by a last effort, or assisted by art, gets rid of the offending matter by *secondary* phenomena appearing in the above mentioned organs. This uncertain, inconstant, accidental effort, *superadded* to the ordinary process of elimination, is the *crisis*. The *critical disease*, then, and the *crisis*, are different manifestations of the vis medicatrix naturæ, freeing the system from morbid principles. This is the true *Hippocratic crisis*, and does not embrace the phenomena of diseases "*sine materia*," in which there is no deleterious agent to expel ; in many acute diseases, as pneumonia, pleurisy, &c. ; in various nervous affections, as hysteria, chorea, &c. ; the disease is often terminated by a copious sweat, or salutary hemorrhage ; these are not *crises*, but merely accidental depletions, as the same amount of fluids lost by venesection, or a hydragogue cathartic. A crisis shows, in fine, that nature has made an attempt to relieve herself by throwing the action of the morbid agent on the organs of elimination, and is therefore a *consequence* and not a *cause* of a salutary change in the system.

By admitting the existence of *crises*, we do not admit that of *critical days*, founded on the Pythagorean doctrine of the power of numbers ; nor does it follow that they invariably appear in certain diseases. In diseases "*sine materia*," as nervous affections, whenever the vital force is exhausted, or too feeble for the necessary reaction, a crisis does not take place. In acute diseases, where the powers of the system are comparatively strong, crises are most frequently *seen*, but even here, the ordinary activity of the excretory organs is usually sufficient, and the morbid matter causes a *critical disease* and not a *crisis*. Another reason, and the principal one, of the rarity of crises, and the consequent denial of their existence, is well explained by Dr. Copland, who says : "The large depletions and the

copious and repeated alvine evacuations very frequently resorted to, often manifestly prevent the accession of regular crises; 1st, by debilitating the patient, and thereby rendering the vital resistance insufficient for their full evolution; and 2d, from the circumstance of these means of cure being substituted or artificial evacuations or crises, and preventing by anticipation and substitution those which are natural.”—(*Medical Dictionary*, Article Crises.)

The nature and amount of the critical discharge, the organ by which it is effected, and the accompanying symptoms, depend on the nature of the disease, the constitution of the individual, and the peculiar treatment employed. The sudorific process by daily exciting the skin, and the subsequent reaction from the cold bath, causes the cutaneous surface and the subjacent tissue to be the usual organs by which the critical evacuation takes place. The kidneys and the mucous surfaces are sometimes the channels of elimination; it is important that it should take place by a *non-vital* organ, *i. e.*, by an organ not “intimately and strongly connected with the central vital parts, the stomach, bowels, brain, &c.” The perspiration may be critical, varying according to the disease and its previous treatment; the sweat of a gouty patient spreads an acrid odor through the apartment; different drugs are sometimes perceived in the perspiration, especially sulphur; it is probable that the blue, green, and different coloured sweats, of which the journals give some instances, are owing to the expulsion of various medicines,—during the sweating process it is very common to see the coverings variously stained.

Is the fever which precedes the crisis necessary for the “*cocction*” of the morbid matter? In the Hippocratic sense, *cocction* is synonymous with *digestion*, the morbid matter undergoing a process similar to that of the food; “the difference,” says Trousseau, “between the aliment and the morbid matter is that the first, assimilated to the substance of the body, causes only a transient disturbance over which the organism easily triumphs; the other, on the contrary, foreign to the system, revolts and troubles; hence fever. For us, as for the school of Hippocrates, fever is always a condition of the cure of these diseases, the condition *sine quâ non* of the morbid *cocction*.”

The sudorific process acts, (as according to Dr. Billing all medicines ought to act,) by causing the relaxed capillaries to contract to their normal dimensions.

As a general rule, the cold bath after sweating is applicable in diseases caused by a chemical or miasmatic matter, *i. e.*, in those having a *materies morbi*; and principally in chronic affections, also in diseases *sine materia*, as in those purely nervous. In the former, it facilitates the combination of the morbid matter with oxygen, and its consequent escape from the body; it removes the diseased fluids, and aided by the rules of hygiene, supplies their place with new and healthy ones; in the latter, by the gradual

regeneration of the fluids it increases the strength and gives a tone to the nervous system. A most important application is to *medicinal* diseases, or those caused by the excessive use of drugs and mineral poisons, especially to *mercurial* affections.

If, as Dr. Todd (*British and Foreign Medical Review*, Oct., 1843) maintains, rheumatism be caused by an undue accumulation of lactic acid in the blood, this process, by exciting the skin, the principal channel for its elimination, must be highly beneficial.

In the wide class of dropsical affections, due either to diminished action of the absorbents or to increased secretion, this process would, *à priori*, seem indicated. [See a case by M. Baumgarten, in the *Journal des Connaissances Medico-Chirurgicales*, for Jan. 1844.]

It has been used successfully in chorea. Dr. Babington says: "In St. Petersburg, I am informed by a Russian physician, a new practice has, within the last year, been adopted with eminent success in obstinate cases of chorea. The patient is placed in a bath as hot as he can bear it; kept there for $\frac{1}{2}$ an hour; and, when thus thrown into the most profuse perspiration, is suddenly plunged into cold water—sudden shock—should not hesitate to employ it on the testimony I have received in its favour."—(*Guy's Hospital Reports*, vol. 6, 1841.)

It is most efficacious in persons of a cold, lymphatic temperament; in the sanguineous temperament it must be used with great caution, to avoid the ill effects of an increased circulation without a corresponding increase of the respiration, the blood not being properly oxygenated.

III. COLD AFFUSION.—Cold affusion is the pouring upon a part, or the whole of the body, of water between 40° and 60° F.; its duration is from two to fifteen minutes—in the partial affusion it is usually upon the head that the water is poured; in the general affusion, it is dashed against the back and shoulders. Dr. Currie used water between 40° and 50° F.; though in the summer he used river water, between 65° and 70°, with about the same effects, if *suddenly* applied. According to him, it may be used at all times of the day "when there is no sense of chilliness present, when the heat of the surface is steadily above what is natural, and when there is no general or profuse perspiration."

Like the cold plunge, the cold affusion is sedative, cooling, and "perturbing" in its immediate action; the consecutive effects depend on the extent of reaction—by its sedative and cooling properties it is very useful in the febrile paroxysm; by its "perturbing" property in the ataxic form of fever, with irregular nervous phenomena; its stimulating powers, from reaction, have been detailed under the head of the cold bath.

It was in the treatment of fever that Dr. Currie, the great advocate of the cold affusion, met with his happiest results,—in the typhus of infirmaries and garrisons. He says, the best time to employ it is at the height of the exacerbation, or immediately after its commencing declination, *i. e.*, be-

tween 6 and 9 P. M.; though it may be used at any time under the restrictions above quoted—by it the fever is often checked on the 1st or 2d day, and its course is shortened in other cases. He adds, “Injury has sometimes occurred from continuing the cold affusion in the period of convalescence. Neither is the cold affusion safe after the sweating stage of fever has continued some time, and the body is passing through that cooling process.”

Dr. Jackson* remarks, “The affusion of cold water may be made boldly and fearlessly at the commencement of the greater number of fevers, where the subject possesses the proper susceptible condition; it must be made cautiously, and with a careful consideration of circumstances, in the latter periods of most.”

The cold affusion diminishes the febrile heat, thirst, and frequent pulse, and induces perspiration and refreshing sleep. In the Reports of the Edinburgh Royal Infirmary, is an account of an epidemic of typhus, in which Dr. Duncan observes, “The direct application of cold to the skin by means of affusion or sponging with cold water and vinegar, was almost universally ordered, and its good effects in reducing morbid temperature, and in alleviating the burning sensations of the patient, were unequivocal; but I have no confidence in its being able to cut short a fever actually begun.”

Dr. Currie also employed the cold affusion in the exanthemata, especially in variola.—He says, “in situations where the eruptive fever of small-pox is clearly distinguishable, and where it does not abate sufficiently on the admission of cold air, the affusion of cold water may be resorted to with confidence and safety, regulated, however, in this application as in every other, by the actual state of the patient’s heat, and of his sensation of heat.”

Mr. Marshall observes, (*Medico-Parochial Researches*), that the treatment he has found the best in confluent small-pox, is one general blood-letting, ad deliquium, to relieve the congested vessels; afterwards, during the continuance of the febrile heat, the cold affusion. He says; “Believing small-pox and scarlatina, in their first stages, at least, to be analogous diseases, and finding that the cold affusion was justly esteemed orthodox practice in the latter complaint, I deemed myself justified in extending its application to the former, and in no single case have I had cause to repent, or even to stand in doubt of the propriety of having done so.”

It has been recommended in the hot stage of intermittents, when the heat is 102°, or even 105° F.; at this heat it does not produce a chilliness. If the thermometric temperature be the guide, the cold affusion might be used, even in the cold stage; as, according to the experiments of M. Garvarret, a thermometer placed in the axilla during the shivering stage of intermittent, always indicated 2, 3, or even 4° above the natural heat.

* History and Cure of Febrile Diseases. London, 1818.

M. Godemar (*Gazette Médicale de Paris*, Nov. 26, 1842) gives six cases illustrating the good effects of the cold affusion in cerebral affections not depending on inflammation or organic lesion; as habitual headache, with perversion of the senses, vivid moral emotions, and stupor; he used it combined with the cold bath.

It is probable, that many cases of pneumonia and pleurisy, said to have been cured by the cold affusion, were rheumatic or neuralgic affections of the thoracic muscles. To the few genuine cases, as to many other miracles of hydrotherapy, it may be said, "In some constitutions, such is the power of the *vis vitæ*, that nature will cure diseases, not only without proper remedies, but even in despite of improper ones."

From time immemorial it has been used in nervous affections, in tetanus, convulsions, neuralgia, apoplexy and cerebral congestions, stupor from poisoning, mental alienation, and various cutaneous eruptions.

It is of extensive application in surgery; and many ingenious syphons have been invented to secure a continuous flow of water. If, as many maintain, the nervous element be the most important in the development of inflammation, the cold affusion, by its sedative effect on this system, must be a powerful antiphlogistic agent; by hindering the "accumulation of innervation," inflammation does not arise—hence its utility in sprains, fractures, dislocations, lacerated and contused wounds, and after severe operations. Berard (on the therapeutic effects of cold affusion in lacerated wounds) says: "The favourable result is thus explained; every contused wound must suppurate; suppuration cannot be established without a reaction of more or less intensity; and it is in order to restrain this reaction within moderate bounds, to prevent the extension of inflammation to neighbouring parts, that the affusion is to be employed,—it is useless when suppuration is well established." By its promoting reaction, it is of great benefit in old sprains, white swellings, from disease of the soft parts, and commencing spontaneous dislocations—by its constricting property, it is useful in reducible strangulated hernia; in capillary hemorrhages, directly or indirectly applied, as to the back and shoulders in epistaxis, hæmoptisis, &c., to the abdomen and thighs in intestinal and uterine hemorrhage.

The contra-indications are the same as for the cold-bath; where external inflammation exists, and suppuration is well established, it must be used with caution, as it "facilitates induration." In fevers, it should not be used when there is a sense of chilliness, even if the thermometer indicate a preternatural heat of the surface; nor when the heat is less than, or only equal to the natural degree, though the patient should not feel chilly.

IV. THE DOUCHE—THE SHOWER BATH.—The douche is one of the most efficacious methods of applying cold water in chronic affections, but one which requires great powers of reaction. It consists of a column of water, from ten to twenty feet high, and between two and four inches in diameter; when employed on the head, it should not be more than $\frac{1}{3}$ of the smallest

of the above dimensions ; the water falls obliquely, and for five to fifteen minutes ; reaction should be facilitated by brisk frictions—it should not be prolonged beyond the second febrile shivering, and should be omitted during a febrile paroxysm.

From what has been already said, it must be evident that the douche is a powerful tonic for those able to bear it ; it excites the cutaneous circulation, reaction being increased by the percussion,—it accelerates the change of matter, and increases the action of the absorbents, as is proved by the rapid disappearance of chronic tumours under its influence,—it is often combined with the sweating process.

Dr. Tweedie* says that the cold douche to the head should never be omitted in cerebral inflammation, the scalp having been previously shaved ; he observes, “ I employ it constantly both in hospital and private practice, and certainly with the most excellent effects. A cold lotion should be constantly applied in the intervals, and on any threatening return of the symptoms, the dash should be immediately employed.” For an account of its efficacy see also a paper by Dr. Cahill (in the *Dublin Journal*, for July, 1839) on its use in delirium tremens ; in the different forms of mania it is also used with great benefit.

Its chief use is in chronic affections, and nervous diseases (chorea, epilepsy, hysteria)—in chronic leucorrhœa, gonorrhœa, and certain catarrhs without secretion—in passive hemorrhage—in chronic glandular swellings, pains of the articulations not depending on inflammation, in paralysis, in incomplete ankylosis, and in muscular stiffness and atony.

In cerebral affections, it can not be safely used when there is coma and feeble pulse, as life might be at once extinguished by such powerful sedation ; for the same reason it should be employed cautiously in weak children and in the aged. It is contra-indicated in acute diseases generally, and in a febrile paroxysm ; during the menstrual discharge, hemorrhoidal flux, and active hemorrhages.

There is a form of the douche upon which Dr. Macartney lays much stress in the treatment of inflammation ; it is what the French call “*douche à irrigation continue*.” It consists of a vessel of cold water, in which is placed a syphon ; the free extremity of this is very small, and allows only a small stream to fall upon the affected part, (usually covered with a compress)—the apparatus must be watched, that the stream may be *continuous*. Dr. Macartney “ places the limb in a trough, covers it with lint, and then conducts the water from a contiguous vessel by means of a broad strip of woollen cloth, acting as a syphon, which is to be inserted in the vessel of water, and is to terminate in a point when it touches the lint.” This prevents, or moderates inflammation by diminishing the size of the arteries, reducing the sensibility, and hindering the “ accumulation of innervation ;” the field of its application is immense.

* Clinical Illustrations of Fever. London, 1830.

The shower bath is familiar to every one; but there is one form, often called the "Scotch douche," which is not much known. In this the shower is alternately cold and warm, causing rapid changes in the cutaneous circulation without much shock; it is used when reaction is feeble, as a preparative for the cold douche.

The ordinary shower bath is usually a mere hygienic means, being one of the least disagreeable methods of applying cold water. It causes a greater shock than the cold bath, without the painful sense of constriction from immersion in a dense medium. It is perhaps the best preservative against the colds and rheumatisms so common to many persons on the slightest exposure, by accustoming them to sudden changes of temperature—it is of benefit between the paroxysms of some forms of asthma. Nothing is better for children and adults of a scrofulous habit than its daily use, gradually progressing from tepid to cold, provided there is no internal disease.

As a therapeutic agent it may be used in nervous diseases; in cerebral affections, with the warm foot bath; in headaches from any excess, &c. It is best taken immediately after rising in the morning.

V. THE WET SHEET—WET COMPRESSES.—The process of envelopment in the wet sheet has been already alluded to, (p. 87;) the first sensation of cold is soon succeeded by a pleasant warmth. It produces two *directly opposite* effects according to the manner and duration of its application—if changed as often as it becomes warm, it is a powerful refrigerant and sedative; if it be continued unchanged for an hour, it produces a sensation of warmth, and copious perspiration, acting like a warm fomentation to the whole body. In fevers, by the first method, it diminishes heat and thirst, facilitates eruptions, and provokes a refreshing perspiration, renewed on the approach of each febrile paroxysm. The application, by the second method, instead of producing *cold*, is a sure and safe way of producing *warmth*; and thus its use even in certain thoracic and abdominal inflammations may not be so unreasonable as many suppose.

Wet compresses are also of two kinds, *cooling* and *heating*; they act on a part of the body as the wet sheet acts on the whole. The cooling compresses, when *properly* applied, are antiphlogistic; but as they are usually applied they are worse than useless,—the usual way is to dip a rag in cold water, apply it to the part, and let it remain till it gets dry,—before this takes place the heat of the surface increases; the shock on each renewal causes a reaction, and increases the inflammation. Their application should be *continued*, and the best way to secure this *continued* low temperature, is by some apparatus like the one of Dr. Macartney mentioned above,—they should not be *abruptly* discontinued, when the inflammation is subdued. They are prompt resolutes in superficial inflammations, and will often prevent suppuration in deep-seated tissues.

The *heating* compresses should be wrung out of cold water, but not so

tightly that they will dry too soon,—they should be covered with *dry* compresses, to avoid rapid evaporation. They are excellent emollient applications, and answer all the indications of a cataplasm; they are much superior to this last, that they cost nothing, undergo no chemical alteration offensive and irritating, do not oppress by their weight, are less liable to become cold, and are more easily reapplied.

They may be used in most local chronic diseases,—in gout, rheumatism, diseases of bone, ulcers, abscesses; they calm pain better than ointments and plasters, and without irritation.

There is one form of the wet compress which is much used by the followers of Priessnitz, the “abdominal cincture.” It consists of a piece of linen about a yard wide, folded in three, about $2\frac{1}{2}$ yards long; half of this is wrung out of cold water and applied to the abdomen; the dry portion of the band should cover this. They use it in almost every chronic abdominal affection—in constipation, in meteorism, colics, visceral congestions, and in affections of the digestive organs.

VI. COLD ABLUTION.—ICE.—From its greater convenience, cold ablution will be much more frequently used as a therapeutic agent, than the cold or shower-bath. The evils attendant on a neglect of cleanliness have been mentioned; the extreme sensibility of the skin; the most powerful predisposing cause of catarrhs and rheumatisms is removed by the daily sponging of the body with cold water immediately after rising.

In febrile diseases, there is nothing more effectual in diminishing the heat of the skin than the cold ablution. Under Dr. Currie’s restrictions the cold *affusion* is perfectly safe; but, as Dr. Elliotson observes: “In general, I do not find the heat steadily above 98° ; I do not find patients free from a certain degree of chilliness; and I, therefore, content myself with tepid or cold ablution. I have never had occasion for affusion, but it is always safe, under the restrictions I have laid down. The cold-bath is too chilling a thing; it would strike too suddenly. But when it would not be safe to take a patient out of bed, and throw cold water upon him, you may always have recourse to ablution, either cold or tepid.”—*Principles and Practice of Medicine*, London, 1842. In eruptive fevers, and especially in the small-pox, it is used almost universally among semi-civilized nations. In affections of the integuments and mucous surfaces accompanied by great heat, the relief afforded by it is instantaneous; as in burns, herpetic affections of the mucous outlets causing intense and obstinate pruritus.

Ice, according to the duration of its application, is a sedative, excitant, tonic, astringent, and resolute.

Frictions with ice or snow are universally employed to restore gradually the circulation in frozen parts; by virtue of the same exciting property, it is used as a revulsive to restrain uterine and other hemorrhage, frequently repeated, and for a few moments at a time; it excites contractility in the distended parts in strangulated hernia, and at the same time diminishes the

volume of the contained matters. By its astringent properties it is useful in inflammation and hemorrhage, by diminishing the calibre of the vessels ; it may be applied even to the bleeding vessels of the uterus, and may be swallowed in hæmatemesis and hæmoptisis. By its sedative power it is the antiphlogistic "par excellence," in inflammation, after venesection, or when this last is impracticable ; in cerebral affections, in traumatic inflammation, and wherever the cause is not internal ; the application in this case should be *continued* till inflammation be subdued, of course taking care not to freeze the parts.

As cases showing its effects in subduing inflammation, and also serving as the types of a large class of diseases, we may mention a case of phlebitis after venesection detailed in the *Gazette des Hôpitaux*, of Paris (Nov. 23d, 1841) ; and a severe inflammation of the tonsils, related by Dr. Gumprecht in the same journal (for Oct. 3d, 1843). The application of ice formed an important part of the celebrated method of Valsalva for the cure of aneurism ; an interesting case of a cure of aneurism of the crural, and end of the external iliac arteries is given in the *Gazette Médicale de Paris* (Sept. 10th, 1841).

The internal administration of cold water will be considered under the two heads of drinking, and injections.

I. THE DRINKING OF COLD WATER.—Nothing is so well calculated to allay thirst as cold water ; it supplies the fluids lost by the various secretions ; by its "universal solving power," it assists digestion ; it promotes the elimination of morbid matters by the perspiration and urine, both of which it *naturally* increases ; it calms the nervous system, and is an elegant universal tonic. According to its temperature, it has a sedative or exciting effect upon the stomach ; of moderate temperature, it calms and refreshes ; very cold, it excites reaction, and its consequent increased afflux of blood, secretion, and absorption. It is a most powerful diaphoretic and diuretic ; if the surface be kept warm, it will cause profuse perspiration ; if the surface be kept cool, it will cause diuresis. According to Dr. Graham, for the first three or four days after drinking largely of cold water, the urine is "limpid, colourless, highly stimulating, inodorous, and apparently without urea ;" as if the kidneys, having as much as they could do to relieve the system of this surplus of water, were not able to separate the urea ; after a time the system gets accustomed to it, and the water is in part carried off by the skin and lungs.

Water is strictly digestible, and furnishes to the system a certain supply of oxygen and hydrogen. Dr. Pereira (*Elements of Materia Medica and Therapeutics*) says that cold water "is a vital stimulus, and more essential to our existence than aliment," that it "serves at least two important purposes in the animal economy ; it repairs the loss of the aqueous parts of the blood, caused by the action of the secreting and exhaling organs ;

and it is a solvent of various alimentary substances, and therefore assists the stomach in the act of digestion, though, *if taken in very large quantities, it may have an opposite effect*, by diluting the gastric juice."

No precise rules can be given as to the quantity of water to be taken. As a general rule, not more than ten or twelve tumblerfuls should be taken daily; these should not be taken rapidly, one after the other, as too much caloric would be abstracted from the internal organs; nor should much be taken during a repast, for the reason just quoted from Pereira; the quantity may be gradually increased, care being taken to prevent the weakness from copious perspiration by the cold bath, proper food, and exercise; it is better supported in summer than in winter, for obvious reasons. When the body is perspiring from mere external heat, much cold water may be taken with safety; the numerous deaths from this cause during our hot summers show the danger when the body is heated by violent exercise.

What are the dangers of water drinking? M. Guerard read a paper before the Academy of Medicine, of Paris (Jan. 25th, 1842), in which he concludes that the fatal effects of cold liquids on the stomach, when the body is sweating, depend on the following causes (in the order of gravity): 1st, the previous heating of the body; 2d, the emptiness of the stomach at the time of taking them; 3d, the quantity swallowed; 4th, its low temperature, and that its effects are more *vital* than *physical*.

It is not from the mere internal use of water that the most important therapeutic effects are to be expected; this must be seconded by proper food, exercise in the open air, and regular habits. It is not uncommon for persons thus benefited, to discontinue their exercise and regular habits, and at the same time to continue to drink largely of cold water; the consequence is, that "the functions of the skin and mucous membrane become partly suppressed, and the water, penetrating into the cellular tissue instead of being carried off, remains there located, constituting the disease of dropsy or anasarca."

The use of cold drinks in fevers has had its advocates and opponents according to the prevailing medical theories. "On the whole," says Dr. Currie, "it may be asserted that the use of cold drink in fever is contrary to modern practice (1814), and that where it is occasionally given, it is administered with caution, and rather permitted than enjoined." He made his experiments, thermometer in hand, and has given the following rules: it is not to be used in the *cold* stage, however urgent the thirst; when the *hot* stage is fairly formed, it may be given freely, with the effect of diminishing the heat of the surface, and inducing perspiration and sleep; and "the more freely in proportion as the heat is farther advanced above the natural standard;" it should be cautiously used at the commencement of the *sweating* stage. After the perspiration has become "general and profuse, the use of cold drink is strictly to be forbidden," for reasons mentioned under the head of cold affusion. Dr. Dewees (*Practice of Physic*, p. 78) says,

"From the well conducted and conclusive experiments of Dr. Alexander, it appears that the heat of the body can transcend the 'sweating point,' and that, when this is the case, it requires a reduction of temperature before the sweating process can commence. He fixes this point at 108° , but we have reason to believe this too high, say 100° or 102° . Hence it is that a drink of *cold* water has many times proved the best diaphoretic, by suddenly bringing down, or reducing the heat of the body to the 'sweating point;' and that by sponging the body with cold water or vinegar, perspiration has been immediately excited. It may, therefore, be laid down as a rule, that all attempts to procure perspiration will be unavailing, if the heat of the body exceed 102° ."

In the exanthemata it is almost sure to bring on perspiration, and the speedy appearance of the eruption; and, according to Dr. Hancock, their course is singularly abridged. Professor Schönlein, of Berlin, asserts that nothing is better calculated to facilitate the eruption of small-pox, than to drink much cool water in small swallows.

From the testimony of physicians in hot climates, cold drinks are of great utility in affections of the gastro-intestinal mucous membrane—in acute and chronic gastritis, accompanied with intense thirst; by their immediate action on the walls of the stomach, in obstinate vomiting, gastralgia; in enteralgia, and certain cases of cholera. Copious draughts of water are useful in many inflammatory affections of the urinary organs; the salts of the urine, being dissolved in a greater quantity of water, are less stimulating to the mucous surfaces.

In the *Medical Magazine* (Boston, 1833) there is a paper by Dr. Shute, recommending cold drinks in cholera; he was led to this treatment by the analogy between the stage of collapse in cholera, and the impaired vital energy resulting from starvation or excessive cold; and his principle of treatment is, "that the greater the sinking of the vital powers, the greater is the necessity of withdrawing all kinds of stimulus,"—for details we must refer to the journal.

As a preservative against the effects of cold, it is far preferable to alcoholic stimulants; Napoleon's Russian campaign will sufficiently prove this. It is second only to the cold bath, in removing inordinate sensibility to cold—in the accidents attending imperfect digestion, a draught of cold water is almost specific.

There is a rare disease, mercurial palsy, which obstinately resists the best directed treatment, which is treated by Piorry in the following simple manner:—he causes the patient to drink copiously of cold water, even to three gallons daily; with long-continued baths accompanied by friction—under this treatment one case recovered in forty-eight hours, and four others in from three to five days; they had baffled all previous attempts at cure; they remained two or three weeks in the hospital after their cure without a relapse in any case. This will not appear inexplicable after

what has been said of the power of water to accelerate the change of matter, and to cause the expulsion of morbid principles.

The contra-indications are few, and easily recognized. The lymphatic temperament; extreme youth and age (from the facility of refrigeration); are contra-indications to its employment in its full extent—also, diseases of the bladder with retention of urine; chronic dropsies; catarrhal^a affections, &c.

II. INJECTIONS.—Under this head will be mentioned enemata, injections into the different cavities, and into the circulation.

Enemata of cold water are comparatively little used. At first, the temperature should be from 55° to 60° F.; in the course of a few days it may be reduced to 45°, 40°, and even lower—in intense inflammations and hemorrhages, icy injections may be used—at first, they should not be retained more than two or three minutes; as the intestine becomes accustomed to the sensation of cold, they may be retained even to their complete absorption.

The affections in which these are peculiarly efficacious are, habitual costiveness, diarrhœa from atony of the intestines, and cholera—in dysentery, used every half hour they diminish the pain and tenesmus, but are not to be relied on to the exclusion of other remedies—in the various symptoms of hysteria, as spasms, colics, palpitations, flatulence, &c., nothing will sooner break up the paroxysm than the cold enema, and cold external applications—in intestinal hemorrhage from the lower portions—as a revulsive, very cold, in hemorrhage of the pelvic viscera.

The principal cavities into which cold water is injected, are the bladder and the uterus.

For injections into the bladder, a catheter with a double channel is the most convenient—they are peculiarly useful in vesical hemorrhage and chronic mucous discharges—as an instance of its utility in the former, we may cite a case from the *Gazette des Hôpitaux* (Paris, 1838); a bleeding which threatened to be fatal, was checked by the injection of 3vj of iced water into the bladder, thrice repeated, allowed to remain five minutes each time.

It is useless to cite cases of the employment of cold and icy injections into the uterus, in hemorrhage from atony or inertia of this organ.

Cold injections are also frequently made into the urethra, vagina, the ears, the nostrils, the lachrymal sac, and fistulous ulcers—in the first, they are used to check bleeding, or to remove and diminish excessive discharges—in the last, at a low temperature, they act as stimulants.

From the experiments of Magendie and others, it appears, that when water is injected into the veins after venesection, so that, with the same bulk of fluid the blood is rendered more watery, “the affections and instincts are changed; from being noisy and uncontrollable, an animal becomes tranquil.” Magendie has prolonged the life of a hydrophobic pa-

tient for seven days, by injecting water (about $3\frac{1}{2}$ quarts) into his veins; from horrible agony the patient became perfectly calm—[death usually occurs in forty-eight hours, in great agony.]

We shall not speak separately of the principal hygienic agents, (pure air, exercise and diet,) as this would lead us too far from our subject; we shall only allude to one, *diet*, as *compelling* the absorption and elimination of morbid products and principles. A rigorous diet, by furnishing an inadequate supply of carbon for combination with the oxygen taken in by the lungs, compels this surplus oxygen to combine with whatever has the strongest affinity for it; this will always be found to be either morbid products in disease, or in health, the matters the least essential to life,—this is proved by the unnatural secretions, for a short time, of such as are submitted to a rigorous diet.

Let us now show the practical application of the foregoing principles to the treatment of particular diseases, by reference to the best authors.

FEVERS.—We have already seen the utility of cold applications, both external and internal, in simple fevers; it remains to say a few words on such applications in the exanthemata.

Water will not remove the proximate cause of disease, nor will drugs; the powers of the organism are alone competent to this,—it can only act by placing the system in the conditions the most favourable for the full manifestation of its curative powers.

The two principal dangers in the exanthemata, are the violence of the eruptive fever, and the retarded appearance or retrocession of the eruption; both of these are benefited by cold water. The eruptive fever being a critical effort of nature to free herself from a morbid principle, any attempt to suppress it entirely, must be dangerous. In ordinary cases of the exanthemata, cold applications should be made with caution, and with more in some than in others—in measles, scarlet fever, and simple erysipelas, (in which the eruption is erythematic and superficial,) retrocession is much more readily produced by cold water, than in small-pox (the eruption of which is deeper-seated and pustular); hence the method of Sydenham, so beneficial in this last, would be dangerous in the former. The object of cold water, then, is not to extinguish the fever, but to keep it within *natural* limits, and to moderate internal inflammation by exciting the reaction of the skin,—if this internal inflammation be too violent for the proper manifestation of the cutaneous symptoms, the internal use of water, and the wet sheet, will diminish the one, and excite the other; if the cutaneous inflammation be too violent, cold or tepid sponging will happily reduce it.

Measles so rarely surpasses the natural standard, that their use must be limited in the treatment. The Germans have especially extolled cold water as a remedy in the grave forms of scarlet fever; particularly Frölich,

of Vienna,—he made the thermometer his guide; the greater the heat of the body, the lower the temperature of the water; at 98°, 100°, 104°, and 107°, he used respectively water at 90°, 75°, 60°, 40°, with which he washed the patient all over,—when the heat is very high, he prefers the cold bath and ablutions,—he has never known the eruption to recede.

Dr. Currie mentions that the cold bath and cold affusions have long been used in small-pox, by the Chinese and the Eastern nations: from his great experience he says, “This, however, I can declare, that in all the cases in which I have used the affusion of cold water during the eruptive fever, however severe the symptoms may have been, these symptoms instantly abated, and the disease assumed a benignant form.”

SPASMODIC AND NERVOUS AFFECTIONS.—The key to the treatment of these diseases is in the following aphorism of Hippocrates (Sect. 2, 26): “*Febrem convulsioni supervenire melius est, quam convulsionem febris:*” in other words “fever resolves spasm.”

There is a perpetual antagonism between the powers of assimilation and nutrition, or the vegetative functions, and the functions of relation, (as of sensation and motion,) or the nervous system,—whence it results that the poorer and feebler the functions of nutrition, the more irregular and disordered are the phenomena of the nervous system; and, on the contrary, the more active and energetic the former, the more regular and orderly are the acts of the latter. When the body, then, is suffering under fever or inflammation, (which essentially belong to the vegetative functions,) few nervous phenomena are observed—as says Hippocrates, if febrile phenomena supervene in a patient suffering under a nervous or spasmodic affection, the disorderly acts of the nervous system are restored to order; on the other hand, if symptoms essentially spasmodic supervene upon a febrile disease, the fever ceases, though frequently with great danger to life—the best preservative, then, against nervous diseases must be the natural equilibrium between these grand systems. If a *pathological* febrile condition be so powerful an antagonist to nervous affections, it would be naturally supposed that a *physiological artificial* fever would be equally efficacious—that this is the case we hope to show by a few examples.

We have already seen that the application of cold water, externally and internally, aided by the rules of hygiene, is a most natural and powerful means of exciting an *artificial physiological* fever.

To mention a few examples—and first of *tetanus*, which is so often beyond all the resources of medicine; enormous doses of opium have been given, even 120 grains in a day, without the least benefit. A physician of Montreal, according to Trousseau, has combined opium with cold affusions—he submits his patient to the cold affusion, till a kind of syncope comes on; he then envelops him in dry, warm woollens, giving a vinous potion containing a large dose of opium. Dr. Currie, following the example of

Dr. Wright, met with the greatest success in idiopathic tetanus, from the cold immersion.

The famous case of the soldier, George Gardner, (in his 13th chapter,) is well worthy of mention; this man took large quantities of opium, which only relieved the spasm as they brought on paralysis; small doses of camphor, with wine, were afterwards substituted; the symptoms returned with increased violence, when it was determined to try the cold bath. He was carried to the salt water baths, and thrown headlong into the water at 36° F., (in March)—the good effects were immediate; and after successive plunges for a minute longer, the muscles gradually relaxed,—when taken out, the pulse and respiration were quite suspended, and the only sign of life was a general tremor. He was briskly rubbed, and warmly enveloped; the pulse and respiration became regular; the heat returned, and he fell asleep,—the convulsive hiccup only returned, which yielded to the daily use of the bath for a fortnight. He relates a second case of success from the same treatment. He did not meet with success in traumatic tetanus, though his experience was not extensive; the experience of Dr. Wright encourages its use even in this kind of tetanus.

Other convulsive diseases are benefited by a similar treatment, as chorea, epilepsy, hysteria—for a case of chorea of nine years standing, in which there was general paralysis and greatly diminished intelligence, cured by the cold bath, see the "*Bulletin de Therapeutique*," (April 1834.)

As long ago as Hippocrates, it was known that convulsions were cut short by an intermittent fever; in the Aphorisms, Sect. 5. 70, we read: "A quartanis correpti, a convulsione non admodum corripuntur; si verò prius corripuntur, et postea quartana supervenerit, liberantur."

Dr. Selode, of Brussels, (*Gazette des Hôpitaux, Paris*, Jan. 16, 1845,) having reflected that the appearance of an intermittent fever in an epileptic had sometimes the effect of modifying the convulsive affection, by causing a different pathological state, had the idea of producing artificial periodic paroxysms against similar attacks. He mentions two cases, in which this artificial fever put an end to the epileptic attacks. An intermittent fever may be *imitated*, as Rostan noticed some years ago,—the *cold* stage may be simulated by the cold bath, from an hour to two hours,—the *hot* stage may be also imitated by covering the patient warmly in bed, in a warm air; the heat becomes very great, and copious *perspiration*, or the 3d stage follows. This inversion of the sudorific process, persevered in for several days, (producing daily a new access,) will finally cause the febrile phenomena, as it were by *habit*, without recourse to the above means.

Dr. Currie mentions a case of obstinate spasmodic stricture of the neck of the bladder, in which not a drop of urine had passed for thirty hours, which was instantly relieved "by placing the patient's feet on a marble slab, and dashing cold water over the thighs and legs." The conclusion which he draws from the use of the cold bath for fourteen years in convulsive dis-

eases is, that the benefit derived from it depends on its being used *during the paroxysm*; that it thus resolves or abates the paroxysm, and retards, or entirely prevents its return.

Cerebral affections.—In cerebral congestions, we have already mentioned cold applications to the head, assisted by previous depletion and revulsive irritation. The following case of M. Récamier (*Gazette des Hôpitaux*, March 12, 1842) shows the utility of cold water in meningitis; the disease had lasted a week, and presented the following symptoms: small and frequent pulse, burning heat of skin, dry and black tongue; almost constant delirium, especially at night; spasmodic, painful contraction of the muscles of the neck; retention of urine. A tumblerful of cold water (50 F.) was ordered every fifteen minutes, with quarter enemata at the same temperature. His object was to excite a movement of reaction towards the skin,—when this took place, the “heating compresses” were applied to the contracted muscles,—the symptoms rapidly abated. In the March and May numbers of the same journal for 1842, he gives several cases of delirium, from various causes, successfully treated by the cold affusion,—among others, a chronic delirium, or commencing mental alienation; the delirium so common as a sequel of meningitis, after the inflammatory symptoms have disappeared; that depending on some unknown modification of the innervation; and that produced by the abuse of alcoholic drinks,—he concludes that the cold affusion may be employed with confidence, when the cerebral affection is without fever, or with a very slight one; when there are no longer symptoms of congestion; and even in those depending on a material lesion, if proper treatment have previously reduced their intensity. In furious insanity, a sudden plunge in the cold bath is almost a specific remedy.

In the stupor arising from certain poisons, as the narcotic drugs, carbonic acid gas, alcohol, &c., a sudden dash of cold water acts with a “voltaic energy, sending a thrill through every nerve”—but, in the “poisoning” by alcohol, it is of the most frequent utility; the drunkard is best roused from his “apoplectic slumbers” by cold water; “thus the heat is reduced, the orifices of the skin opened, sensible perspiration is produced, and one half of the mischief of intoxication is prevented.”

There is no organ the seat of more functional and organic troubles, capable of being prevented or relieved by the use of cold water, than the uterus. This organ, from being the seat of a *monthly* congestion, very frequently becomes *permanently* congested, with the usual accompaniments of hypertrophy, displacement, and chronic irritations; leucorrhœa, amenorrhœa, sterility, and functional hysteric troubles. The cold bath will remedy or prevent this, by causing a more equal distribution of nervous influence, by exciting cutaneous reaction, and diminishing the primary uterine congestion.

In cutaneous affections, M. Biett says, that simple baths are especially

useful in the dry, squamous forms; that their efficacy is less remarkable in the papulous forms, though they relieve the itching of certain lichens; that in the vesicular forms they are only useful when the inflammation has begun to subside; that in the impetiginous forms they may be used when the pustule has been succeeded by a crust,—the shower-bath at 75° F., he has found advantageous in general squamous affections, in which the skin seems to be almost insensible.

MM. Devergie and Gibert have made more recent experiments with the “sudorific process,” in chronic cutaneous diseases, at the Hospital of St. Louis, Paris; viz., by sweating, cold immersion, and a proper regimen. It is expressly stated, (*Gazette des Hôpitaux*, Sept. 24, 1842,) that the cases submitted to this treatment were either such as are considered incurable, or had been already submitted to various other remedies without relief,—the cases were mostly the squamous forms. M. Devergie says, “that hydrotherapy has cured, but the cure has been often followed by relapses; that, in general, it has ameliorated the cutaneous affection; that it has evidently ameliorated the health, except in one case.”

It is an old and well-founded opinion, that it is dangerous to treat gout by the prolonged use of cold water; the disease leaves the surface and attacks the internal organs, which, being less sensitive, the patient supposes himself cured.

The two indications in gout are, to subdue local inflammation, and to expel the morbid matter from the system.

The first is well effected by cold applications,—these should be strictly *local*, and should be discontinued when the effect has been obtained. Dr. Graham speaks from experience of their efficacy in relieving the *pain* of gout; he took four hundred drops of laudanum in one night without the least effect, the pain protecting the system against the narcotic influence—he infers, “that the sedative effects of cold very much surpass those of opium, or, perhaps, of any other known remedy.” If a gouty articulation be submitted to the cold *douche*, the pain is soon relieved; but a vivid redness supervenes, with great heat and itching—in some cases, resolution of the tumour takes place by increased absorption; in others, violent inflammation ensues, with suppuration and loss of the joint.

The profuse ingurgitations of cold water, as practised at Gräfenberg, can hardly assist in expelling the gouty matter from the system; the urine is increased in *quantity*, but not the amount of *urea* excreted, (some combination of which constitutes gouty matter)—the kidneys have enough to do to free the system from the excess of water; hence, it is probable, that even a *less* amount of *urea* is excreted. The gouty matter, repelled into the system by *cold*, should be eliminated from the body by the natural outlet, the kidneys; this can only be effected by rigid *abstinence* and *disuse* of watery drinks,—a copious sediment soon appears in the urine, which disappears with the disease.

Dr. Bostock (*London Medical Gazette*, Feb. 1844) gives a case of gout cured by a complete course of "hydropathization;" says he: "Mechanical and unscientific as the idea may appear, I confess I am disposed to attribute a considerable effect to the complete removal of all the offensive matter which had polluted the vessels, thus thoroughly rinsing them out, and leaving them in a clear state to receive a supply of more healthy fluids."

Dr. Todd, in an article before alluded to, in which he maintains that the cause of rheumatism is an undue accumulation of lactic acid in the blood, (for the elimination of which, the skin is the natural outlet,) says: "We are much inclined to believe, from evidence which has recently come before us, that too much attention cannot be given to promoting the action of the skin, in both the acute and chronic forms of this disease." Every day's experience shows, that to produce a *critical* sweat, is a proper indication in rheumatism; but, on the other hand, we often see long-continued, provoked perspiration, not only not relieving, but actually rendering the disease worse—are not these provoked, unnatural sweats, the efforts of nature to relieve herself from irritating *drugs*? At any rate, the "sudorific process," exciting a *natural* perspiration, must be far superior to an *artificial, irritative, medicinal* sweat.

Is the mercurial treatment the best in syphilis? At any rate, it is the most prompt and agreeable, though it cannot be denied that syphilis can efficiently be cured without mercury. Dr. Graham (*op. cit.*) remarks, that a great proportion of the patients he saw at Gräfenberg were affected with some form of syphilis. A curious, and almost constant phenomenon during the "sudorific" treatment of syphilis which had been for the time cured by mercury, was the *reappearance* of the syphilitic accidents; this had been often noticed at mineral springs, and yet the fact was not explained. Do not these (numerous) facts throw some light upon the action of mercury in syphilis, and upon that of other specific remedies? It would seem that mercury enters into some mysterious combination with the syphilitic poison, forming as it were an *innocuous neutral salt*; which combination being destroyed by the solvent power of water, the mercury is carried out of the system, leaving the free virus to recommence its ravages. Too great quantities of mercury are generally given in syphilis; this causes mercurial diseases worse than the original syphilis; these are mistaken for the phenomena of syphilis, and new doses are given, till the patient is actually poisoned. It is in these cases, in which mercury has been given in excess, that the purifying and alterative powers of water are especially useful.

What has been said of the abuse of mercury, will apply to diseases produced by an excess of other specifics, as iodine, arsenic, antimony, quinine, &c.; and the vast range of diseases which the French call "*cacochymie medicale*." Hydrotherapy will be found equally useful in the diseases

arising from emanations from lead, copper, brass, and mercury in various trades.

Dr. Black, one of the claimants of the anatomical theory of pain in neuralgia, says (*London Lancet*, 1844), "the affected nerves, being contained in rigid canals, must be subjected to injurious pressure, whenever their accompanying vessels are unusually distended with blood." If, as he supposes, the neuralgic paroxysms depend upon this pressure, cold applications should be beneficial by diminishing the quantity of blood in the vessels, and consequently the pressure.

From the experiments of M. Fourcault, showing that albuminuria is an invariable consequence of a suppression of the cutaneous functions; and, before him, of Mr. Ross, (*Lancet*, 1842-3,) who says, "when the natural office of the skin is much impeded, there will be a determination of albumen to the kidneys, and this principle will be occasionally excreted by these organs in its undecomposed state," we may gather some useful hints for the prevention, and perhaps for the cure, of albuminuria. Bright's disease is most commonly observed in cold damp climates, and in those professions exposed to cold and wet, or in those in whom the cutaneous functions are liable to be interrupted; hence, the securing of the free action of the skin, and rendering it less sensible to changes of temperature, by the hygienic employment of cold water, are the most simple and efficient preventives of this affection. From the success of Dover's powder in the hands of English practitioners, we might naturally expect much more from the "sudorific process."

We trust we have thus given a sufficiently full account of the different methods of using cold water for the prevention and cure of disease, their principal indications and contra-indications. We have endeavored to keep within the strict line of recorded facts, and to interpret these in accordance with the acknowledged laws of physiology and pathology. At any rate, all will allow that cold water may be made a powerful *auxiliary* to medicine; but from its very power, it becomes a dangerous weapon in the hands of the ignorant and unprincipled. Moreover, were it ten times more powerful than it really is, and administered with a perfect knowledge of its properties and the laws of the human system, it could never be raised to the honour which Priessnitz and his followers would give it, the absurd title of a **UNIVERSAL REMEDY**.

ART. V.—*The Treatment and Cure of Crétins and Idiots, with an Account of a Visit to the Institution on the Abendberg in Switzerland.* By BUCKMINSTER BROWN, M. D., of Boston.

IN consequence of the great and constantly increasing interest which has been manifested by the public mind, throughout the civilized world, in regard to the treatment of the insane, and the resulting amelioration in their condition, the attention of the humane has been attracted towards that still more unfortunate class in whom the intellectual functions, instead of being disordered, have never been developed, or if developed at all, but in a very slight degree.

Aware that this subject had excited an interest in the minds of some of the benevolent in *our* community as well as elsewhere, and that when once such interest was awakened, it would not be allowed to sleep until something had been effected, I have felt that even the slightest information that could be obtained in regard to it might prove of importance, and would serve to hasten the day when that most wretched and uncared-for class of beings in existence shall be raised from their situation as outcasts from society, scarcely elevated above the brutes, and receive that attention and care to which, as members of the human family, they are so fully entitled.

These considerations it was which induced me, previous to a recent absence in Europe, to note this among my memoranda of objects which would deserve a share of my attention. That I have accomplished much in this respect I cannot boast, but it has occurred to me that a short sketch of my visit to the Hospital for the Cure and Education of the Crétins, on the Abendberg, Canton of Berne, Switzerland, together with a few remarks upon the subject, may not be without interest to some of your readers.

This institution is situated in the midst of the higher Alps, upon a height elevated 3000 feet above the level of the sea, surrounded by scenery which excels in beauty and majesty any which can be met with elsewhere, even in Switzerland.

It was on a most beautiful afternoon in July that, with one companion, I ascended from the village of Interlachen to the summit of the Abendberg. The winding path by which the ascent is made is extremely steep and difficult, and so encumbered with rolling stones and decaying leaves, that the horses which we had obtained in the village below were of but little service to us, as we preferred trusting ourselves to our own feet rather than even the cautious step of these mountain bred animals.

Notwithstanding the fatigue, I felt, on arriving at the top, that I was fully rewarded for my exertions. We were received with extreme politeness by Dr. Juggenbuhl, the founder and conductor of the institution, and the

scene which presented itself to us was one of the most curious, interesting, and impressive I think I ever witnessed.

A little band of children, strange in appearance and in manners, were gathered upon one of the terraces overlooking the valley, and commanding one of the most glorious views which the world can present. If any external influences can elevate and ennoble the torpid soul, and can awaken its dormant powers, they are such as are met with here. The sunny valley, with the picturesque village of Interlachen, the lakes of Brienz and Thun lay at our feet, encircled by lofty mountains, of which the snow-covered Jungfrau, Eiker, Monsh, and Faulhorn were the most striking.

The exhilarating mountain air, combined with gymnastic exercises, together with the mental effect produced by the scenes in the midst of which they live, are, as we shall presently see, among the remedies upon which Dr. J. places much dependence for accomplishing the cure of the unfortunates who are placed under his charge.

I had much conversation with this gentleman upon the treatment which he pursued, and the degree of success which attended his efforts. The untiring perseverance, energy and patience which are necessary to command a favourable result in the task which he has undertaken, can only be realized by those who have themselves observed these qualities there put in practice.

And in this connection I cannot forbear mentioning the manner—at once illustrating that benevolence of heart and quickness of perception which could alone have prompted and given origin to the undertaking—in which his attention was first drawn to the subject.

“Called upon some years since,” he says in his report, “to examine a malignant disease which, from time to time, infested some of the beautiful valleys of the higher Alps, I saw an old crétin, who was stammering a half-forgotten prayer before an image of the Virgin, at Seedorf, in the Canton of Uri. This sight excited my feelings in favour of these unhappy creatures, and fixed my vocation. A being still capable of conceiving the thought of God is worthy of every care and every sacrifice. These individuals of our species, these debarred brothers, are they not more worthy of our interest than those races of animals which we labour to make perfect? It is in such charitable efforts, and not in vain formulas, that consists that divine love taught us by Jesus Christ.” “It is all important, then, that a practical experiment should be tried. Much has been already written upon this subject, but little has been done. A chain of remarkable circumstances fixed my choice upon the Abendberg.”*

* “L’Abendberg, Etablissement pour la Guérison et l’Education des Enfants Crétins.

“Premier Rapport, par le Dr. Juggenbuhl, Member et Correspondant de la Société

Such was the origin of this singular and unique institution.

That it was within the bounds of possibility that sooner or later some means should be discovered for rendering back to society and usefulness a portion of the human race so sunken below everything that characterizes humanity, is a proposition to which all will readily concede who have watched the progress of events in other respects, who have seen the insane loosed from their chains, their dungeons and their cages thrown open, and those who have been considered in former times as having a mark set upon their brow by the finger of God, and who have been treated with a harshness and brutality in accordance with this belief, brought back within the pale of humanity, and receiving that kindness and consideration which their afflicted condition so imperatively demands. None, let me repeat, who have seen the obstacles overcome in the education of the deaf, the dumb, and the blind, or who have seen individuals, deprived by nature of all their senses together, gifted with a means of communicating with their fellow beings, and restored to the enjoyments and delights of companionship, would ever feel willing to deny that such a fate might also be in store for the so-called idiot.

I say the so-called idiot, for I have reasons for believing that this is a term which should not be indiscriminately applied, and that there is a marked distinction to be made between those to whom the epithet is truly applicable, and those who, on the continent of Europe, are known under the name of *crétins*. The former are, in comparison, rarely met with in any part of the world, while the latter term, so far from being appropriate alone to a certain number of poor wretches who are to be found only in some of the dark and damp valleys of Switzerland, may be much more widely extended, and among their number may be ranked the numerous individuals who are to be found scattered over every country, and who, under various names, such as innocents, simpletons, or idiots, are to be met with in the valleys of Vermont, New Hampshire, or Scotland, as well as in Switzerland.

The great majority of these have all the physiological and psychological characteristics of the *crétin*. They have in common, as has been said by another writer when describing the *crétin*, every element of intellect.

“Ce qui manque à l'idiot [*crétin*] ce n'est ni la perception distincte, ni la sensation interne, ni la sensation externe, ni l'attention, ni la comparaison, ni le jugement, ni l'entendement propre, ni la prévoyance, ni les goûts, ni les désirs, ni les affections personnelles; l'idiot [*crétin*] fait acte, dans des limites restreintes, il est vrai, de toutes les facultés dites intellectuelles; ce qui lui manque, c'est la liberté nécessaire pour appliquer

Helvétique des Sciences Naturelles, de la Société Impériale et Royale des Médecins de Vienne, et de la Société Physico-médicale d'Erlangen.”

ces facultés à l'ordre des faits moraux et abstraits, c'est la synergie, la spontanéité d'où jaillit la volonté morale."—*Gazette Médicale*, 16th year (1846), No. 38, vol. i., p. 736.

If, then, this is true, if crétin is a term which will admit of such wide application, and if he does in general possess most of these qualities, or even if individual cures do occur in which slight traces of but one or two of them are to be found, yet upon these scarcely discernible sparks of intellectual life must hang the hopes of the philanthropic, and to kindle these into a flame is to be the object of all his efforts. In many cases he will find that these qualities *are* wanting, that the hearing is obtuse, taste gone, the sensation dull, perception scarcely apparent,—that it is almost impossible to fix the attention, and that in some cases even that single instrument, the faculty of irritation, which is the last to leave them, is so overcome by physical as well as intellectual lassitude as to induce an opposition to all solicitation, and to all foreign incitements; yet even these obstacles have been found to give way before unwearied perseverance.

But the question will naturally be asked, how is this possible? how is the commencement to be made when every avenue is closed? There is but one way of commencing, and that is by expanding the physical powers, by strengthening them, and by removing, as far as possible, and it can be done by slow degrees, the physiological incumbrances which prevent the admission of ideas to the imprisoned spirit.

In the first place, there must be entire change of scene and air; the subject must be removed from the unwholesome atmosphere of the low valley, wherein the disease is generated, to the mountain heights; there he is constantly imbibing an impalpable remedy,—for such does the atmosphere in truth become to one who has never before breathed it in its purity. In the next place he must use gymnastic exercises, by which the frame is invigorated and the lethargic energies aroused. These are all important agents, without which nothing need be attempted. To them, of course, are added the other hygienic auxiliaries, good and wholesome food, frequent bathing, the douche, friction, and Dr. J. also makes much use of electro-magnetism; this he employs month after month, and with great benefit. He mentions one case in which the nervous system was so enfeebled, that for the space of six months the patient was completely insensible even to the very powerful action of this agent. After that time he began to feel it, and was soon susceptible to its slightest touch.

The organs of the senses are thus exercised, and colours, sounds, and chemical agents are employed. An acoustic trumpet is often introduced into the ear, a word is uttered which strikes more forcibly upon the dull sense, while at the same time the child is made to observe the inflexions of the lips and tongue necessary to its pronunciation; knitting, sewing, and the composition of words, by means of large wooden letters, are, in course of time, acquired.

Moral means are of vast importance, gentleness, kindness, and affection.

Dr. Juggenbuhl particularly mentions a circumstance, from its singularity well worthy of attention; the saccades;—the sudden leaps;—by which, when month after month of unmitigated effort on the part of the teacher has elapsed without his receiving the slightest encouragement or sign indicative that his labours are to be crowned with success, the darkened intellect will often, in truth, almost always reach the light.

It would seem, from his description, as if these exertions had gradually, and by imperceptible degrees, penetrated the obscurity, until at last a slight opening had been made, and a sudden flood of light admitted, permitting the soul to act with a clearness the more striking from the contrast with the thick cloud which had previously enveloped it.

After many long and weary trials, unexpectedly the child will find his speech; at another leap some simple idea will make entrance, and the task thus far accomplished, the foundation is laid upon which is built the whole after superstructure. “When once (says Dr. Niederer) he (Dr. Juggenbuhl) has seized the end of the thread, he unrols it with infinite precaution, that it may not be broken until there is finally multiplied, out of the bosom of the intellectual obscurity, a series of fruitful images.”

Dr. Juggenbuhl drew my attention to the form of the cranium, the characteristics of which, and of the bones generally, as also of the features, strongly indicate the scrofulous origin of the malady.

Crétinism is likewise often combined with paralysis.

He then spoke of idiotism, (he has three or four idiots in his establishment,) and of the unfailing signs by which it may be distinguished from crétinism, with which he says it should by no means be confounded. He pointed out a pretty little girl sitting among the rest, idly turning over a drum, and compared her to the crétins by which she was surrounded. The little girl was of a beautiful form with delicate regular features, good complexion, with just a becoming tinge of red upon her cheek. In her eye there was nothing that indicated her dreadful infirmity. Yet this child was an idiot as hopeless as such a case could be, although, as applied to children, hopeless is a word scarcely, I believe, to be found in Dr. J.’s vocabulary.

There has a slight, very slight change for the better taken place even in this case, some perceptible improvement, the consequence probably of the alteration in her outward circumstances. It is in this, that consists the real difference between the wretch, be it idiot or crétin, brought up in poverty and filth, uncared for and almost completely abandoned, whom we see groveling upon the ground, or ranging at large along the roadsides, and that one, whose parents in a better condition, is more decent in appearance and behaviour, exciting feelings of pity rather than of disgust. Now compare the class of which this little girl is a type, with the child afflicted with crétinism.

In the latter, it is disease of the framework; it is the external inlets which

are closed, in the former it is almost unchangeable mental conformation. Or, more properly speaking, in the latter, it is an altered condition of the nerves, sensitive and motor, and of their peripheral ramifications; in the former it is to the great nervous centre alone that the evil is to be traced.

Fortunately the latter is the rule, the former is the exception. The latter is to be found in almost every country, the former is in comparison rarely met with; such is the conclusion to which Dr. Juggenbuhl has arrived as the result of his extended experience.

Crétinism is undoubtedly one of the numerous forms in which scrofula manifests itself. It occurs in that variety of temperament which has been denominated the bilious or torpid; in children of dark complexion, short neck, head large, dilated pupils, who have tumid abdomen and are generally of a lax and spongy fibre. Some of the external signs of a scrofulous diathesis may be found upon the idiot, and they are such as indicate the sanguine or irritable temperament, and in him the ravages of this disease are much less apparent. Look at the head, it is well sloped, or, instead of being too large with a disproportioned protuberance of the occiput, it is too small, and gives us the idea of compression; and the features, they are well formed: such are some of the chief distinctions. There is also a difference in the moral qualities. The idiot is often peevish and malicious, constantly doing injury to his companions, without provocation striking, pinching, pulling their hair, or something of the kind. Of this we witnessed an example, even in the innocent looking little girl before us, who suddenly leaving her drum, jumped forwards and struck another little girl who was standing near, with her back turned towards her. In this respect the true crétin is totally different. They may have occasional bursts of anger when provoked, but in general they are kind and amiable in their disposition, not mischievous, not malicious, but affectionate and easily won to place confidence in those by whom they are well treated, and will fondle about them like a dog receiving the caresses of his master. This particularly attracted my notice, for by a few kind words and gestures I had quickly three or four of them around me smiling and playing with the buttons of my coat, climbing on my knee, and by their mute yet winning confidence giving rise to a strong feeling of pity and commiseration.

My attention was drawn to one of the most truly painful cases that I ever met with. It was that of a beautiful little English girl who was led or rather carried across the terrace, by one of the assistants. Partial paralysis of both the lower limbs was evident at the first glance. But the mind was in a yet more paralyzed condition than the body.

This child was nine years of age. At an earlier period she had evinced that quickness of intelligence, that vividness of perception, that aptness at acquiring, which parents so delight to see in their children and which they hold as the dawning of superior genius, and all this in an uncommon degree.

The happy mother left nothing undone for the intellectual cultivation of her child. The faster she acquired, the more she was urged, and still urged, until at last drawn too tight, the silver cord was loosened, the tender plant forced beyond its strength was blighted in the bud. The overtasked mental powers reacted upon the physical, and the child became paralyzed and an idiot. From the paralysis it was, thanks to the judicious treatment here received, gradually recovering, but in regard to its mind, Dr. J. seemed to entertain but little hope. - Here she stood with her glossy chestnut hair flowing in the wind, her mild blue eyes and fair complexion, a beautiful picture, and yet one of complete mental imbecility; her glance was wandering and vacant, and her fingers were scarcely ever removed from her mouth. She had evidently been the idol of her parents, and from her beauty and intellectual endowments, had well deserved to be so.

Crétinism, in Switzerland, is often found in close companionship with goitre; removed from the injurious influences to which both equally owe their origin, is, as I have before observed, the first indication to be complied with.

Among many interesting cases the histories of which are given in the report, one of the most remarkable is that of Dr. Odet, at the present time a practising physician in one of the valleys of Switzerland. He was himself a crétin, and he selected crétinism as the subject of his dissertation when examined at Montpellier for the degree of doctor of medicine.

In this dissertation, which was published, he relates his own case and that of his youngest brother.

He says, "it was by following these curative means that a learned physician, whom I am proud to own as a near relation, has been enabled to replace me in the rank of man." "It was also by fortifying the physical system that we were enabled to develop, little by little, the intelligence of my youngest brother, who, while still at the breast, was separated from his mother by order of the physician. Notwithstanding that he was frequently visited by his friends, crétinism secretly seized upon his intellectual faculties under the mask of some of the maladies incident to childhood. It was during one of these visits that his parents, much to their consternation, made the discovery of the danger that menaced him. They set everything to work, but the evil had already taken profound root. He was in the second stage. Time and patience were necessary. They were not discouraged, and at the age of eight years, he commenced to make himself understood, at nine he articulated some entire phrases, and at eleven, he was fitted to enter an academy."

The following cases, also taken from the report, will be read with interest.

M. S., two years of age when admitted into the institution, which was in the month of May, 1841. There was in this case complete physical prostration, the muscles were relaxed; the head hung like that of a newly-born infant; the skin pale and cold to the touch; there was a scrofulous abscess in the neck, and the bones of the hand were softened and swollen. She was mute

but had a lively countenance. She soon began to smile to her nurse and to notice some of the surrounding objects. At the expiration of two months, there was such a change in this young girl, that her mother, on making her a visit, did not at first recognize her.

A whole year, however, elapsed before she was enabled to walk. At the commencement of the winter, she learnt to eat alone. At first, she articulated only the vowels, later, and with much difficulty, the consonants.

Speech came suddenly after a long trial.

At four years of age she could recite little prayers by heart, could knit and perform other light tasks.

She is now of a height and constitution entirely conformed to her age.

"Her parents are healthy and intelligent."

"Elizabeth Z., of Berne, three years of age, was born of healthy and intelligent parents. Her mother, however, during the year previous to the birth of Elizabeth, had suffered much from family troubles. Not many months after, her parents remarked that she would lay perfectly still, often with her tongue hanging out of her mouth, that she took no pleasure in anything, and that in other respects her health was much disordered. There was soon a complete stagnation of all her faculties. At the age of two years she was two feet in height; her limbs were short and thick, without proportion; the epiphysis of the articulations of the hands were swollen, and there was saliency of the occiput. This child had babbled a few words, but, neglected by her parents, had become mute and had never learnt to stand or to walk.

"After a sojourn of two months on the Abdenberg, she was able to walk, her digestion was corrected, but each attempt at instruction or at play caused her to utter plaintive cries. During nine months her mind remained stationary; suddenly she commenced to articulate words, to designate the parts of the body, and to become developed in all respects."

Crétins offer many examples of rapid and sudden improvement. It is this which ought to encourage us not to abandon our treatment too soon. It is often crowned with success after many months have elapsed.

Martin D., of Fribourg, was five years of age on his entrance. His parents were healthy, but they inhabited the lower part of the town, which was subject to crétinism; one of his brothers was also a crétin. Martin was very tardy in learning to hold up his head, to stand, and to walk. The glands of the neck are swollen. He has strabismus. His tongue is thick, and he has the rudiments of goitre. Martin soon learnt the letters of the alphabet and to pronounce little phrases. But his memory was so feeble that he often would forget on one day, that which he had learnt the day previous. An exercise much prolonged could alone remedy this evil.

His physical strength progressed equally with his moral. His complexion is now animated and has the tint of health; his step is firm and his body robust; thanks to gymnastic exercises and good air. He can already read and write a little, and distinguish colours.

The total number of patients that had been treated at the institution up to the date of the report (1844), was 30. Six of these had been restored to the normal development of childhood, sixteen are still under treatment, six, idiots rather than crétins, have been returned to their homes in an ameliorated bodily condition, and two are dead. Crétinism almost universally makes its appearance in the second year, and from three to six are

in general necessary to effect a cure. If, however, it is attacked at its very commencement, this result is often obtained in from one to two years.

Such are the principles, such the method, and such the result of this noble experiment, first thoroughly tested on the summit of the Abendberg.

Within a few years a similar institution has been established in Paris, and I have understood that other of the European governments are preparing to follow the example thus set them, by the foundation within their own dominions of asylums devoted to the same philanthropic purposes.

ART. VI.—*On Vesico-Vaginal Fistula.* By JOHN P. METTAUER, M. D.,
LL. D., of Virginia.

THIS disgusting infirmity is generally the product of tedious labours, in which the bladder is sometimes ruptured from over-distension with urine, induced by the pressure of the child's head upon the urethra, and from neglect of the catheter. In some instances, too, the long-continued pressure of the head of the fœtus upon the cervix vésicæ, without retention, so disorganizes its textures, as to cause sloughing to take place after delivery, and thus to form an opening between the bladder and vagina. Wounds have likewise opened a communication between the bladder and vagina, which, finally, have degenerated into fistula.

One of the most loathsome concomitants of this afflictive accident is incorrigible incontinence of urine; and this attendant not unfrequently subjects the woman to troublesome excoriations of the labia, perineum, and sometimes of the anus, and groins. The general health suffers impairment in some instances, but not generally to a serious extent. The mortified feelings, and confinement, generally seemed to make greater inroads on the health of females affected with this infirmity, than the infirmity itself.

The management of the following cases will exemplify the mode of treating vesico-vaginal fistula, which I have usually adopted.

CASE I.—The subject of this case was a robust and well-formed woman, about thirty-four years of age. She had given birth to four children before the unfortunate labour took place, from which the accident followed; and this was not distinguished by anything calculated to produce the accident except protraction, and the greatest neglect of the catheter, on the part of the obstetrical attendants. The fistula was the effect of extensive sloughing of the bladder, about the central part of the region embraced by the imaginary lines of the vesical triangle, and was fully the size of a Spanish milled dollar, and nearly circular. The margins of the opening were even and perfectly healed over; and the contiguous structure ultimately healthy in all respects. This case had existed six months before it came under my observation. Not a drop of urine had passed through the urethra since

the fistulous opening formed; and the woman necessarily suffered from incessant incontinence and dribbling of urine, with their consequences, excoriation and pain.

Two days before the operation was performed, the woman's diet was restricted to liquids exclusively, such as panada water, tea poured from soaked bread, and rice gruel. On each of these days, a gentle purgative of oil was directed, to place the alimentary canal in as jejune a state as possible before the operation was performed.

For this operation, the woman was placed and confined precisely as in the operation for laceration of the perineum. The vagina was dilated with two pretty broad spatulæ introduced some distance into it, properly curved, and firmly pressed against the opposing sides of the walls of the passage, and steadily held by an assistant, on each side of the woman. The first step in the operation was to denude the margin of the fistulous opening of its mucous covering. For this purpose, I employed delicate hooks, and forceps to fasten upon and elevate the mucous covering, while it was excised with keen scissors curved flatlong. This operation required care that the section should not be carried too deeply into the submucous textures; and, also, that the separated belt was removed entire if possible. The denuded surface thus formed was fully eight lines in width, and embraced the salient free border of the fistula, as well as the margin exterior to it on the vaginal surface. To render the operation less difficult, by reason of unavoidable hemorrhage, the wounded surface was frequently ablated by injecting cold water upon it; which expedient served both to remove adhering coagula, and to arrest the flow of blood from the incisions. As soon as the margin was effectually denuded of its epithelium, the opening was closed by approximating its opposing sides, with a series of metallic sutures, introduced in the following manner. A straight needle, thirteen lines in length, was armed with a silken ligature doubled, so as to form a noose at one of its free ends, fully six inches long. In, or upon the noose, the bent extremity of a leaden wire, of small size, was fastened. The eyed end of the needle was then pressed into the small thimble-like cavity on one blade of the forceps needle-port. The blades of the forceps needle-port, were then partially closed, so as to allow me to introduce that instrument with the needle into the vagina. The blades were again separated, the one supporting the needle being carefully passed into the fistulous opening with the point of the needle directed to the floor on the left side of the bladder, fully ten lines beyond the border of the fistula, and perpendicular to the wall of the bladder. I now brought the point of the needle in contact with the inner surface of the bladder, closing the blades of the forceps needle-port in the vagina, at the same time upon its surface so as gently to compress it. The needle was then pressed through the vesico-vaginal wall, by firmly closing the blades of the needle-port, until its point appeared through the perforation of the unarmed blade on the vaginal surface. The needle was now taken hold of with the dressing-forceps, and drawn fairly through the wall, as well as the compound ligature attached to it. The porte-forceps was now disengaged and removed from the fistulous opening and vagina. The metallic thread was drawn through one-third its length, and after separating its hook from the loop of the thread still remaining in the eye of the needle, its other extremity was connected with the loop, and the needle again inserted into the cavity of the porte-blade, and the opposite side of the opening sutured as the first. The first suture was applied within seven lines of the posterior verge of the opening

so as to approximate the opposing denuded surfaces accurately, without forming much of a pucker. After drawing the last end of the metallic thread through, the two extremities were placed side by side, and very slightly twisted together. The metallic ligatures were fully eight inches in length, to prevent their displacement before they were twisted together; and to afford sufficient length for the twisted portion, to render the ligatures easy of access, should they require to be tightened subsequent to the operation. According to this plan, eight distinct sutures were introduced; and after they were all loosely inserted, they were progressively tightened by traction and by twisting their free ends together, commencing with the first, using for the purpose the dressing forceps. As the ligatures were tightened, I found it necessary to adjust the denuded margin from time to time with the probe, so as to have them accurately approximated without puckers, or folds. Every suture was twisted from left to right; and the twisting was continued until each twisted extremity became decidedly erect, and of bristle-like spring, when touched with the forceps. After the sutures were all tightened, the opening was perfectly closed in every part of it; and the line of contact of the opposing surfaces measured two inches. The wires were now cut off a proper length to project a little beyond the verge of the vulva, and the mucous membrane of the labia and vagina was protected against their irritation by investing them with oiled silk.

A short and exceedingly light metallic tube of silver was then introduced into the urethra, and confined with a tape tied to its eye, and one end of the tape carried under the buttock and connected with a circular bandage around the body, while the other was attached to the same bandage above the opposite groin.

In this condition the woman was put to bed, resting on the left side supported by folded sheets, and with the knees tied together.

The third day after the operation, the wires were tightened, and again on the seventh. The urine escaped freely through the tube, without accumulating to any extent in the bladder. Not the slightest uneasiness was felt in the seat of the opening after the first day. There was no fever, nor was there the least action from the bowels until after the eighth day. No other food was allowed but the thinnest liquids. Rice water was the principal food taken, and in very small quantity, and after long intervals. On the thirteenth day, the ligatures were cut away, as directed in laceration of the perineum, and perfect union was found to have taken place throughout the entire line of contact. Indeed, it was not possible to distinguish that line, only at one extremity, so perfectly had the parts united. The tube was not laid aside for four weeks, fearing the contractions of the bladder to expel much urine from its cavity at a time, might endanger the union so recently formed. When the tube was laid aside, it was discovered that the bladder not only possessed its complete expulsive powers, but that the sphincter was also entirely free from disorder. There was not the least contraction of the vagina, and in all respects the parts were perfectly restored. The woman has had two children since the operation, without a return of the accident.

CASE II.—The subject of this case was a servant, aged about twenty, of good constitution, and well-formed; and the fistula followed her first labour, which, according to her representation, was tedious and badly managed; especially, as relates to the use of the catheter, which, strange to remark, was never employed, although no urine had been passed for

twenty-four hours before delivery took place. The fistulous opening was about the size of a twenty-five cent piece of coin, through which every drop of urine passed from the bladder. The vagina was greatly contracted in consequence of the previous ulcerations or sloughing of its mucous lining. That part situated above, or posterior to the fistulous opening, was not longer than the little finger, and consisted of hard, uneven cicatrices, of very unyielding nature. To such an extent had the vagina contracted, that I did not feel willing to attempt the operation for the relief of the fistulous opening, until that passage was, in some degree, restored. Without, it would not have been possible to remedy the fistula, as the field of action would not have been sufficient for the use of proper instruments. My first effort, then, was to enlarge the vagina, which was effected by dissecting down the adhesions, dividing such bands and contractions as existed, and dilating the passage thus liberated with sponge tents. For these purposes, the woman was placed and confined as already described in the first case. It was required to act with great caution in forming the sections and divisions of the contracted and adherent structures. I found it necessary to employ the handle of the scalpel in separating adhesions on the inferior part of the passage, to guard, as far as possible, against wounding the rectum. The vagina was dilated for the operation with the spatula already described. Considerable hemorrhage attended this operation, which, however, was repressed by the free application of ice water. After three months, the operation for the relief of the fistula was performed, and precisely on the plan fully described in the first case. Only three sutures were required in this case, which were found sufficient to close the opening completely. The short, light silver tube, was kept in the urethra as in the first case. In three days, the wires were tightened; and in nine, I was compelled to cut them away, by reason of the ulcerated condition of the textures through which they had been introduced. Little benefit resulted from this operation; and I was satisfied the failure was due entirely to the imperfectly organized condition of the texture entering into the composition of the margins of the fistulous opening, the consequence of sloughing. The border was greatly altered in appearance, as well as changed in elasticity. Indeed, the greater portion of the margin was morbidly indurated, and unyielding. To afford the woman the best chance for relief, I determined not to repeat the operation until the structures should have lost all inflammatory tenderness, and to have regained a quasi normal condition of their acquired organization. After nine months, the operation was repeated, but with no better success than the first. I continued, however, to repeat the operation twice a year, after the second trial, for eight times, and, finally, had to relinquish the case, not, though, without having reduced the opening considerably, and proportionally relieved the woman of her incontinence. I believe this case, nevertheless, could have been cured in process of time, more especially, if sexual intercourse could have been prevented, which intercourse, I have no doubt, defeated several of the operations. I am well convinced, however, that cases like this, in which extensive sloughing had taken place, followed by adhesions, contractions, and indurations of the margins of the fistulous openings, will always prove exceedingly difficult of cure.

The four other cases were treated partly with forceps-needle-porte and metallic sutures, and the straight needle; and partly with curved needles, such as were directed in laceration of the perineum, and the needle forceps

for their introduction. In two of these cases, I employed thread ligatures, but did not find them to answer as well as the metallic, especially, when they became loose, for they could not be tightened. The curved needle is better suited to small fistulous openings; and the cases in which I employed it were of that description. This needle was armed with the compound ligature as for laceration of the perineum. It was then inserted through the fistula into the vesical cavity, the eye extremity being held and directed by the end of the forceps, instead of the side, as directed in laceration of the perineum. After having entered the cavity of the bladder, the point was directed to the floor, on the left side of the opening, fully eight lines from its border, and pressed through the vesico-vaginal wall, until its point appeared on the vaginal surface. The point was now taken hold of with the dressing-forceps, and drawn downwards,—the forceps holding the eye being released simultaneously,—and with it, the compound ligature, until the metallic thread had been drawn through one-third of its whole length. The wire was now separated from the loop of the thread portion of the ligature, and its other extremity connected with the loop. Thus armed, the needle was carried through the opposite border, at a like distance from its edge with the ligature, so as to form one suture. In this manner, as many sutures were introduced as became necessary to close the opening, whether metallic, thread, or silken ligatures were employed. When thread or silken ligatures were used, they were, of course, to be tied, and I invariably formed the surgeon's knot. In one of these cases, a troublesome fistulous opening followed the operation with the metallic ligatures, in consequence of permitting the wire to remain in until the parts had healed around it. This operation fistula was very small, but served to produce nearly as troublesome consequences in the way of inconvenience, as the original fistula. It was finally connected by repeatedly touching the seat of it with *nitras argenti*.

I am decidedly of the opinion, that every case of vesico-vaginal fistula can be cured, and my success justifies the statement.

Art. VII.—*Case of Doubtful Sex.* By S. H. HARRIS, M. D., of Clarksville, Va.

THE existence of hermaphrodites, or those creatures which were at one time supposed to unite in the same individual the distinctive organs of the two sexes, is now, I believe, wholly denied by physiologists. Creatures of our race, however, have frequently been noticed, presenting such equivocal appearances in their sexual apparatus as to render it exceedingly

doubtful as to their sexuality. A monster of this singular character is now living in Mecklinburg county, Virginia, and is probably as remarkable a case of the kind as any recorded in the annals of physiology.

In describing the creature I shall use the masculine pronoun man, more for the sake of convenience, than from any conviction of its grammatical propriety.

Ned, a slave and house servant, wearing man's apparel, is about eighteen years of age and probably five feet eight or nine inches high; and though not corpulent, is rather robust than otherwise. His head is large, with a coarse masculine face, wide mouth, thick lips, feminine voice, and a chin entirely destitute of beard. His skin is soft and delicate, with upper and lower extremities well formed and rounded, with the exception of his feet which resemble very much the males of the African race. Thus far, however, his general appearance presents nothing very remarkable, or anything calculated to excite doubts as to his sexuality. His shining ebony skin and rounded limb, are not uncommon with negro boys, trained up as house servants among the luxurious livers of the South. But on opening his vest and shirt bosom, there are presented two large and well developed protuberant mammæ, having all the external characteristics of the breast of a healthy well-formed young woman. His neck, shoulders and chest partake likewise of this feminine character, having the soft and voluptuous outline of the female. On examining the external genital organs, which, by the way, are exhibited with marked reluctance, a strange and anomalous appearance is presented. The pubis is large, prominent, and covered with hair as in the female, and but for the conspicuous projection of a dwarfish-looking penis, about an inch long in the usual situation of that organ, the creature would at once be pronounced a woman. This penis is naturally formed in every respect, and eminently endowed, as he informed me, with virile sensibility. Immediately below it is a cleft or fissure running back as in the female organ, to the perineum, the sides of which are formed of thick folds of skin, resembling somewhat the scrotum, and shaded with long hair, representing tolerably well the external labia of the female. No testicles can be found. On separating the thighs the fissure is found to be from an inch to an inch and a half deep, smooth at the bottom and exactly in the situation of the vagina. The cavernous portions of the penis may be distinctly felt through the walls of the cavity near the bottom. The membrane lining it appears, in fact, to be only a continuation of the outward skin, but is more soft and delicate; without, however, any of the characteristics of the vaginal mucous membrane. Pressing the finger on the bottom it yields so readily, as to induce the belief that there is a cavity within, the outlet to which is merely closed up by the skin or membrane stretched across the bottom of the fissure. But the anomaly does not stop here. This singular creature has been regularly menstruating for three or four years *through the penis*, attended in its inception and progress, by all the symptoms which commonly characterize the catamenia in young females. So well marked are the returns of this monthly discharge by the usual disturbance of the system, that the elder members of the family are never at a loss to determine when he is under its influence. As in most females in every station of life, there is likewise at such periods a shrinking from observation, and the constant exercise of a sleepless vigilance in preventing exposure. The amount or character of the discharge has never been clearly ascertained, but from his

own imperfect account of it,—and the evidences furnished by his linen, it differs not very materially either in quantity or quality from that of a young woman.

The question here naturally presents itself, to which of the sexes does, this human being belong? In view of all the facts stated, the conclusion I think, is forced upon us, that the female organs predominate, or, in other words, that while the creature has only one of the organs of the male, and that an imperfect one, he has within the pelvis the interior genital apparatus of the female. That there is a uterus with its appendages I feel no doubt; or whence this regular catamenial discharge, and all those attributes, both moral and physical, which mark the presence of such an organ?—But it has been remarked that he displays in his general deportment, a decided partiality for the society of young females, and it has even been noticed that he exhibits towards them at times strong salacious propensities. This, I think, can be easily accounted for on the supposition, that he has been, from childhood up, taught to look upon himself as a male, and now in imitation of others, deports himself as such to the other sex. Whether his amorous advances to the dusky maidens around him, has ever resulted in any practical display of virility, is unknown. In the absence of all information on the subject, it is fair to conclude, that no seminal discharge has, or ever will take place. Such a phenomenon as a regular menstrual discharge, and the immersion of semen masculinum, from the same set of organs, would place the creature in a new order of beings, with sexual endowments and faculties, but a little less remarkable than those ascribed to the fabled hermaphrodites. But whence comes this peculiar fluid? If furnished by a womb, how does it make its way into the urethra?—Or is it thrown off by the bladder acting vicariously for a contiguous organ, the natural outlet of which is occluded in the way before mentioned? These are questions certainly of very little importance in a practical point of view; but relating as they do to the interesting science of physiology, are deemed not wholly unworthy the consideration of the learned.

[In connection with the above very curious case it may be interesting to quote the following analogous one related by WM. JAMES BARRY, M. D., in the *New York Journ. of Med.*, (Jan. 1847).]

In March, 1843, I was requested to examine the case of Levi Suydam, aged 23 years, a native of Salisbury, Conn. At the exciting and warmly contested election of the spring of this year, almost everything bearing the semblance of the human form, of the male sex, was brought to the ballot-box. It was at this time, and under these circumstances, that the above-mentioned person was presented by the whigs of Salisbury, to the board of Selectmen, to be made a free man; he was challenged by the opposite party on the ground that he was more a female than a male, and that, in his physical organization, he partook of both sexes.

The following was the result of the first examination. On exposing his person, I found the mons veneris covered in the usual way; an imperforate

penis, subject to erections, and about two inches and a half in length, with corresponding dimensions; the dorsum of the penis connected by the cuticle and cellular membrane to the pubis, leaving about an inch and a half free, or not bound up, and towards the pubic region. This penis has a well-formed glans, with a depression in the usual place of the meatus urinarius, a well-defined prepuce, with foramen, &c. The scrotum not fully developed, inasmuch as it was but half the usual size, and not pendulous. In the scrotum, and on the right side of the penis, one testicle of the size of a common filbert, with spermatic cord attached. In the perineum, at the root of the corpora cavernosa, an opening through which micturition was performed, this opening large enough to admit the introduction of an ordinary sized catheter. Having found a penis and one testicle, though imperfectly developed, and without further examination, I gave it as my opinion, that the person in question was a male citizen, and consequently entitled to all the privileges of a freeman.

On the morning of the 1st Monday in April (election day) I was informed that Dr. Ticknor would oppose Suydam's admission. Suydam came forward; Dr. Ticknor objected. I then stated to the meeting, that from an examination I had made, I pronounced the person in question to be a male, and requested that Dr. Ticknor might, with the consent of Suydam, retire into an adjoining room, and examine for himself. This was done, when Dr. Ticknor stated to the meeting that he was convinced that Suydam was a male. Suydam accordingly was admitted a freeman—voted—and the whig ticket carried by one majority!

A few days after the election, it was told me that Suydam had regular catamenia. I then commenced further investigations, and learned from Mrs. Ayres, the sister of Suydam, that she had washed for him for years, and that he menstruated as regularly, but not as profusely, as most women. I next saw Suydam, who very unwillingly confessed that such was the fact. I then requested him to meet Dr. Ticknor and myself the next day at my office; when the following additional particulars were elicited. Said Suydam is five feet two inches in height, light-colored hair, fair complexion, with a beardless chin, and decidedly of a sanguineous temperament, narrow shoulders, and broad hips; in short, every way of a feminine figure. Well developed mammæ, with nipples and areola. On passing a female catheter into the opening through which micturition was performed, and through which, he again stated, he had a monthly, periodical, bloody discharge, instead of traversing a canal and drawing off urine, the catheter appeared to enter immediately a passage similar to the vagina, three or four inches in depth, and in which there was considerable play of the instrument. He stated that he had amorous desires, and that, at such times, his inclination was for the male sex; his feminine propensities, such as a fondness for gay colors, for pieces of calico, comparing and placing them together, and an aversion for bodily labor, and an inability to perform the same, were remarked by many.

I further learned from an old lady who was present at the birth of Suydam, that on the second day after his birth, Dr. Delamater, who attended as accoucheur, made with an instrument, the opening through which he has ever since performed micturition.

ART. VIII.—*Account of a Physical Sign of Pneumonia of the Apex of the Lungs.* By WM. M. BOLING, M. D., of Montgomery, Ala.

My experience, so far as it extends, is confirmatory of the opinion that pneumonia, commencing at the apex of the lung, is, in proportion to the number of cases, the most frequently fatal form of the disease. I have met with about six cases of this affection, at least have recognized, or identified about that number. They all proved fatal. I will notice three of them:—In one, the subject of which was a powerful and robust Irishman, 30 years old, “fond of a dram,” but not decidedly intemperate, and previously in good health,—the disease supervened on an attack of acute bronchitis, about the fifth day, and proved fatal on the fourteenth day, counting from the first of his illness. In the second case, the patient was a rather delicate negro woman about 28 years old,—the attack commenced during a slight indisposition of a catarrhal character, and proved fatal on the thirteenth day. The other patient was a strong and robust negro woman, about 22 years old, previously in good health, and in her case the termination was on the ninth day.

The general symptoms and march of the disease, in these, did not differ in any material point, from those in the more common form of pneumonia, except in the point of commencement, and in this perhaps:—that the morbid alteration had proceeded to a less extent, at the time of death, than is commonly the case in the latter; that is, death supervened from a less extensive local disease. In the other cases, the lung ran most rapidly into a state of hepatization, the solidification not being preceded by the crepitant bronchus, but by a total absence of the respiratory murmur, while the chest over the affected part remained still resonant on percussion.*

My object, however, in the present remarks, is simply to speak of a physical sign that was present, in each of the three cases detailed, which I presume also to be present in others of the same character, the observance of which may probably lead to a correct diagnosis at an earlier period, in some instances, than it would otherwise be made. This is a fine mucous or crepitant rhonchus, seemingly seated in the larynx, loud enough to be heard distinctly at the distance of two or three feet from the patient, and so *persistent*, that it is not removable, or but momentarily, by any effort to expectorate which the patient may make, while at the same time there are present none of the signs of bronchitis or laryngitis. Though it is exceedingly annoying to the observer to hear it, because it impresses him with the belief that it is distressing to the patient, and he looks with a feeling rather of impatience for an attempt, by an effort to expecto-

* The writer has briefly noticed this condition in *The Western Journal of Medicine and Surgery* for Dec. 1844.

rate, for its removal; the patient seems perfectly indifferent to its presence, which would not be the case were it really produced by the presence of a small quantity of tenacious mucus in the larynx itself. The sound, then, is only seemingly produced in the larynx, for on applying the stethoscope immediately under or just above the clavicles, it will be discovered to proceed from the apex of one or the other lung, which will be found the seat of inflammatory action. It would seem that the sound there produced in the pulmonary vesicles, must be conveyed by the larger bronchial ramifications, numerous and superficial at this point, to the larynx, where, in consequence of the thinness of the tube, or rather the thinness of its covering, and its proximity to the surface, the deceptive impression of its production in this organ, from the presence of a small quantity of viscid mucus, is created.

It is the indifference of the patient to the presence of the sound, but still more especially its *persistence*, which constitutes its peculiar and distinctive feature, and upon which its value as an evidence of pneumonia commencing in the apex of the lung depends. In other affections of the lungs and air passages, more especially in bronchitis, we may have a somewhat similar sound produced in the larynx itself, by the play of the passing air through a small quantity of viscid mucus there collected; but under such circumstances, it is removable by coughing, or an effort to expectorate, and once removed may not return again, or only after a considerable interval, when a fresh collection of mucus has taken place. The patient, too, does not manifest the same indifference in regard to its presence, but the mucus producing it soon excites an effort for its removal.

As pneumonic inflammation, in the greater number of cases, commences at the base of the lung, the inexperienced stethoscopist, on observing the general symptoms of pneumonia present, may neglect to apply his instrument over the apex of the organ in attempting to discover the location and extent of the disease, and failing to detect any physical evidences of morbid action near the base, might at once attribute the symptoms present to inflammation, somewhat circumscribed, of the central portion of the pulmonary texture; too limited in extent, and too remote from the surface, to give rise to the peculiar physical phenomena. To be sure, were he to examine the entire chest, the disease would be detected. The recollection of the sign which I have named, leads at once to its locality.

It is altogether probable, that in a number of instances of this kind, the exact seat of morbid action has escaped my own observation, as the peculiar sign which I have spoken of, I considered indicative of the most extreme danger, long before I discovered its connection with inflammation, commencing at the apex of the lung.

ART. IX.—*Cases of Scarlatina.* By GEORGE K. PARDEE, M. D., of Wadsworth, Ohio.

THE following cases of scarlatina occurred here last November, and are interesting, not only from the fact that they exhibit in a strong light, the malignant character of that disease, but also because they gave rise to some diversity of opinion, and to some discussion, whether they were truly cases of scarlatina, in which some toxicological questions are involved. "This may be seen in the details of the cases."

CASE I.—This was a little boy about four years old. He was attacked at night, Nov. 15th, after having been asleep an hour or more, with great distress, headache, and difficulty of breathing, soreness of throat, &c. "His feet were put into warm water, and in a little time he vomited, with relief to the difficulty of breathing." Some ipecac. was administered, which was immediately rejected, and again repeated with a similar result. Soon there began to be purging; and vomiting and purging continued until a short time before death. The discharges were tinged with bile, both by vomiting and stool, which were copious and liquid. There was also much thirst. Within twenty-four hours from the attack, the skin was covered with a *scarlet efflorescence*; the throat externally swollen; internally, the fauces were red, much difficulty of swallowing, croupy respiration, and pulse rapid. Forty-eight hours after the attack, the deglutition was so difficult as to prevent the swallowing of drink through the night. There was some delirium. The eruption still continued. Next day the same. In a few hours more the patient became delirious, and then comatose, and died seventy-two hours from the time of the attack.

The treatment consisted of mucilages, rubefacients, and once cupping a few hours before death.

Post-mortem appearances 40 hours after death.—Bowels lank. No eruption perceptible on the skin. Stomach about half full of yellow bile. Mucous coat covered with a few scattered red patches. Intestines healthy, except that there was an intussusception of the small intestines, of about two feet invaginated in about six inches of intestine below; so as to fill it completely. The invaginated portion was gorged with blood, but not sphacelated or softened. No feces in intestines above or below; nor any fluid in vicinity, above invaginated portion. Heart and lungs healthy. *Larynx intensely inflamed*, and much diminished in size. Epiglottis tumid and rima glottidis nearly closed. *Pharynx inflamed*, and there was pus all about the upper portion of it, and root of tongue. Tonsils enlarged and inflamed.

CASE II.—On the evening of the 18th, a daughter, aged 6 years, was attacked with symptoms very closely resembling the boy, viz., vomiting and purging, great thirst, with redness and soreness of fauces, headache; and in twelve or eighteen hours, a *scarlet efflorescence*, over the cutaneous surface. Vomiting fluid, and tinged of a greenish-yellow colour, and dejections frequent and liquid and of a greenish cast, with some portions of tenacious mucus. Next day, symptoms all aggravated. Respiration

hurried and wheezing, thirst urgent, throat swollen externally, and deglutition difficult. Tongue red at edges, the rest, white, with the papillæ red and elevated. Skin rough. Had blue pill and laxative injections and demulcent drink, and counter-irritation. Cupped over stomach and blister applied, and a few grains calomel administered. There soon began to be a livid appearance of the lips, suffusion of the eyes, incoherency and convulsions for five or six hours; and death thirty-six hours after the attack. There were seen two of the berries and a few of the seeds of the *solanum dulcamara* in the stools, on the night preceding death. And also one *lumbricoides*. There were clusters of the berries of the *sol. dulc.* hanging in the house accessible to them.

Post-mortem appearances sixteen hours after death.—Stomach partially filled with a dark-green fluid. One point of redness about the size of a shilling, near cardiac orifice. Softening of whole mucous membrane of stomach. Bowels healthy, except intussusception of small bowels in five or six different portions, and both upwards and downwards, but not much length to the invaginations. Liver healthy. Bladder contracted, but healthy. No feces in intestines, but some fluid below invaginations. No leave obtained to examine the throat.

CASE III.—In the afternoon of the 18th, another son, less than 2 years of age, was attacked with vomiting, purging, thirst and sore throat, and in a day or so, a *scarlet efflorescence* over the surface. In his stools were also seeds, and berries of the *solanum dulcamara*, as reported. He recovered.

CASE IV.—The mother of the children was attacked on the 19th, with chilliness, headache, and sore throat and distress. And on the 20th, at evening, all the symptoms increased, with sickness at stomach, and *scarlet efflorescence* over the surface. Throat externally swollen, salivary secretion increased, tongue red at edges with red streak through the middle. The rest white. She recovered.

CASE V.—A few days subsequently, another girl 8 or 9 years old, was attacked with similar symptoms, but to a less intense degree. The *scarlet efflorescence* and *anginose symptoms* were present. She recovered, and a few days afterwards had *desquamation of the cuticle*, and pretty soon afterwards, she had pain and soreness of the extremities and *anasarca*. She eat some of the bittersweet berries some weeks before her attack, and her sickness was ascribed to the *irritation caused* by the acrid quality of those berries.

CASE VI.—A young lady who was living in the family, was subsequently attacked with symptoms peculiar to the former cases, but less severely; but the *anginose symptoms* and *scarlet efflorescence* were prominent. She recovered.

Subsequently scarlatina occurred in different parts of the town sporadically, and in a few weeks it might be said to be prevailing as an epidemic, and has continued from that time until the present. The cases were generally mild, but of all grades of severity, from the mildest sore throat to the most severe, but most of them being accompanied with the *scarlet efflorescence of the skin*, many of them having desquamations of the cuticle, and many

others having secondary anasarcaous affections, and sometimes congestions of internal organs, of which the following will give an idea.

CASE VII.—L. B., aged 16, was attacked with mild symptoms of scarlatina, had sore throat, headache, &c., with *scarlet efflorescence* appearing early, and he apparently recovered without resorting to any medical adviser. He was attacked with symptoms of congestion of the brain, after being at work at some light labour, being seized with pain, and a protracted chill, and in a short time became comatose and died in about thirty hours. Recourse was had to bleeding largely, cupping, counter-irritation, and croton oil, &c., but with no relief to the symptoms.

Remarks.—The toxicological question which arose was, first, whether the berries of the *solanum dulcamara* are poisonous? and second, whether cases 2d and 3d were cases of poisoning with these berries? And strange as it may seem, there were found medical men who advocated the affirmative of both these propositions, and who, to maintain their consistency, were obliged to *assume* that Case I. was also one of *poisoning* with the *dulcamara*, although he was not known to have eaten any of them, neither was it suspected until the berries were seen in the stools of Cases II. and III., and also that Case V. was produced by *berries eaten several weeks before*; and all because of the close resemblance of the symptoms in the six cases, showing conclusively, an identity in the cause productive of the disease. And I design my remarks to have a bearing upon those questions.

It is worthy of consideration, that scarlatina may prevail in every variety of form, from the mildest to the most malignant; that it may prove fatal in a few hours, or it may be protracted several days; that it is Protean, simulating many diseases, and is most prone to be severe in the earlier cases. The *poison* seeming to lose its virulence in some measure, or exhaust itself, or become weakened, as it diffuses itself. And again, who is not aware that children are the greatest sufferers by it? It may be remarked here of scarlatina in general, that there are two classes of symptoms, either of which being present, are decisive of the disease, viz., those which belong to the throat and obtain the designation of *anginose* and the *scarlet efflorescence* or *eruption* of the skin. They may both be present, or either of them singly, and the disease be perfectly well marked, and distinct. Without them, the diagnosis becomes more obscure, and is only made clear by the prevalence of scarlatina as an epidemic, and the shortness of the period of the illness being so brief that these diagnostic symptoms are not allowed time to develop themselves; the system being overpowered by the *scarlatinous poison* and sinking too soon for nature to stamp upon the disease its characteristic symptoms. There is another set of symptoms, I might have mentioned here as giving decisive evidence of the existence of scarlatina, though not necessary to the making out of a full and complete case, yet when present, affording indisputable proof of scarlatina, a case being as full and complete without them. I refer now to desquamation of the cuti-

cle and the anasarcaous effusions which follow scarlatina as a sequence. It is considered additional evidence which renders it conclusive, where the disease has been ambiguous in its several stages, that these sequences appear.

It may be seen that these cases which I have detailed had no lack of the diagnostic symptoms. In all of them, there was the *scarlet efflorescence of the skin* and also the *anginose symptoms*, and in Case V. *desquamation of the cuticle* followed by *anasarca* as a sequence.

What then, it may be asked, was there lacking to make out a *clear undisputed case of scarlatina*? Every essential symptom was present. But there were *vomiting and purging*, and it was alleged by those who contended that these were cases of poisoning, that vomiting and purging afforded evidence of poison of an irritant character introduced into the stomach, and that the berries of the *solanum dulcamara* gave rise to these symptoms and acted upon the skin, to produce the scarlet eruption, in the same manner as mushrooms are sometimes known to do. How many practitioners of medicine may be found, who, during the prevalence of scarlatina as an epidemic, have witnessed vomitings and purgings, such as I have detailed in the foregoing cases, time and again? It is no new thing. Read *Armstrong's Essay on Scarlatina*, and above all, *Graves' Clinical Lectures*. In the epidemic which prevailed in Ireland in 1834, of which the latter gives an account, vomitings and purgings of the peculiar character I have described, were the most prominent symptoms throughout the disease. These symptoms only indicate that the mucous membrane of the alimentary canal is suffering from the disease, or that the brain, as in Ireland, is the suffering organ, and the vomiting and purging sympathetic of the cerebral disease.

Again, The boy in Case I. is not known to have eaten any of the berries, and was not suspected of it until after his death, so that it is all gratuitous so far as respects his case. So also in Case V. It is known there were none eaten for some weeks preceding her illness; and, in Case IV., it is known there were none eaten, and also in Cases VI. and VII.

It may therefore, I think, fairly be concluded that the berries eaten in Cases II. and III. had no agency in modifying the disease in any degree, for there were no symptoms present in these cases which were not also present in the others. And, again, if we should admit that the berries of the bittersweet are irritants (which I by no means do), the symptoms would not resemble these I have detailed, taken in mass. How, on this assumption, are we to explain the swollen throat? the red tongue? and difficult deglutition? the severe and rapidly fatal prostration?

Are they narcotics? What narcotic produces such symptoms?

But again. It is urged that the inflammation of the stomach and the intussusception of the bowels are evidences of an acrid irritant having been taken, such as is alleged that the *solanum dulcamara* is. Here I would

remark, that the *solanum dulcamara* is not classed among the *narcotico-acrids* by authors, but among the *narcotics*. On the contrary, inflammation of the stomach is among the lesions which follow severe cases of scarlatina, as may be seen by consulting Prof. Chapman's essay on that disease. And invaginations of the intestines are only evidence that the peristaltic action is disturbed by some cause, such as crude indigestible food. In *Eberle's Practice*, vol. ii., page 337, he says, "Invaginations of the small intestines frequently take place in children, and occasion but slight and temporary inconvenience."

But I proceed to a consideration of another aspect of the case. Are the berries of the *solanum dulcamara* poisonous? On this point there is much uniformity among the authorities. Nearly all the old writers class them among the *narcotics* and all the modern ones call them inert, or nearly so. There are but few exceptions to this remark. Of the former class it may be sufficient to remark that they are so set down in Hooper's Medical Dictionary and Coxe's Dispensatory. In the latter work, where the opinion is quite positively expressed, it may be a question, whether the narcotic which was on the mind of the writer, was not the *atropa belladonna*, in common language called *deadly nightshade*, which is known to be a powerful poison, instead of the *solanum dulcamara*, commonly called *woody nightshade*; the two plants having the same generic name of *nightshade* might easily be confounded, and the properties of the *atropa belladonna* be erroneously ascribed to the *solanum dulcamara*. And indeed Christison, in his admirable work on poisons, assures us that authors have thus confounded the two articles, from the similarity of name, and have ascribed the poisonous properties of the *atropa belladonna* to the *solanum dulcamara*.

But, as I remarked, nearly all the modern writers call the *solanum dulcamara* nearly or quite inert. Among which it is sufficient to mention Orfila on Poisons; Beck, in his work on Jurisprudence; Taylor's Jurisprudence; the article on the *solanum dulcamara* in Wood & Bache's Dispensatory; Pereira's *Materia Medica*; and last, though not least, Christison on Poisons; all of which concur in this opinion in regard to the qualities of the *solanum dulcamara*. An array of testimony which it would be impossible to meet by adverse opinions of equal weight in the medical world.

But it may be alleged that the location or some particular cause may modify the effects of an article, so that although not generally poisonous, it might be in the case under consideration. And this idea receives some support from the fact that the potato (*solanum tuberosa*), when it grows in the dark, is said to become poisonous.

Now the *solanum dulcamara*, the berries of which were eaten in two of the cases which I have detailed, grew upon a dry open situation, with no external circumstances about it which could modify its general character. The plant corresponded with the description of the *solanum dulcamara* of the books, so that here was no room for suspicion

With a view to test the qualities of the berries I procured all that remained upon the vine from which those were taken, of which the children eat, and the following are the results:

Experiment 1. I took 100 berries from the stems (they weighed a little more than an ounce), mixed them with some mashed potato and gave them to a middle-sized dog. No perceptible effect followed, and the next day I gave him 205 berries mixed as before (they weighed $2\frac{1}{4}$ oz.). I could not perceive that the dog was any way affected by them.

Exp. 2. I gave a small dog 100 berries. No effects being produced, I next day gave him 200. There could not be perceived any sensible effect from them, though this and the first dog were carefully watched.

Exp. 3. A young man eat 60 of the berries. Next day he perceived no effect from them and took 120 more. On the day following, his urine appeared tinged of a yellowish colour. It is worthy of remark that there were no evacuations from his bowels until the day after he took the last dose, and then the skins and seeds appeared in his stools. There was no other effect perceptible.

Exp. 4. I gave a small sickly boy, 9 years old, 20 berries and the day following I gave him 40 more. There did not appear to be any sensible effect produced by them.

Exp. 5. A young lady eat 30 berries. No effects followed.

Exp. 6. A young man eat 30 berries. No effects.

These experiments, although alone not entirely conclusive, yet taken in connection with experiments detailed by Christison and others, render the question of their being poisonous no longer *debateable*.

REVIEW.

ART. X.—*A Treatise on the Practice of Medicine.*—By GEORGE B. WOOD, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania: One of the Authors of the Dispensatory of the United States of America, &c. &c. In two Volumes. Philadelphia: Grigg, Elliot and Co., 1847, 8vo., pp. 798-840.

A Systematic Treatise on the Practice of Medicine, embracing a view of the present state of our knowledge in relation to the causes, nature, seat and treatment of the several forms of disease to which the human organism is liable, is a work indispensable to the student, and scarcely less so to the young practitioner. Even the physician of more matured experience, will find such a book useful for occasional reference, provided the exposition it presents of the received doctrines, and of the established facts and observations in pathology and therapeutics, are full and accurate. The importance of such a treatise will readily be perceived. From its pages, numbers will derive, in a great measure, their views of the nature and treatment of diseases, while many will make it even the standard by which to test all subsequent observations and experience. It is evident, therefore, that the preparation of a systematic treatise on the practice of medicine, is no easy task. For its faithful execution, it demands not merely industry, but professional talents and acquirements of the very highest order.

Until a very late period, the Profession in the United States were content with reprints of the systematic treatises, published by the medical writers of England. Some of these are unquestionably works of the highest merit, but, at the same time, do not furnish safe guides, in all respects, for the physicians of this country. There is between the characters of many of our diseases, and those of Europe, a marked difference, and, consequently, an important modification is often demanded in their therapeutical management, which renders it important that the observations and experience of our own practitioners, should be embodied in every systematic treatise, published for the guidance of the American physician. Hence, it is, with pleasure, that we find a disposition evinced on the part of our distinguished medical men to undertake the laborious task of preparing works of this class.

The latest production of the kind is the one before us, and though it is not so copious and elaborate as many of the European treatises, it exhibits a very excellent and faithful outline of what is known in relation to the nature and treatment of all the more important diseases of the human organism. If it does not present as thorough an investigation of every question connected with the several subjects it embraces, as may be satisfactory to all who shall consult it; and if, in its therapeutical precepts, there should appear to be an occasional deficiency in some of those details essential to the proper application of the remedies adapted to fulfil the general directions for the treatment of diseases; the Treatise of Dr. Wood will, nevertheless, be found a safe and useful

guide to the student and young practitioner. It is sufficiently accurate in its description of the various diseases—generally sound in its pathological views, and highly judicious in its practical directions. While it never confuses the reader by leaving him to form his opinion amid an array of opposing authorities, it never misleads him by the enunciation of bold and startling hypotheses, nor by the rashness of its practical directions. The work is, in fact, marked throughout by the utmost cautiousness, and a careful adherence to well established principles and facts. Dr. Wood remarks, in the Preface, that,—

“In adding another to the many valuable existing Treatises on the Practice of Medicine, the author may be reasonably expected to show, upon what grounds he has ventured to advance a new claim to the public attention, already so fully occupied. He has no other excuse to offer than this, that he has written in obedience to impulses which he could not well resist. Having been engaged for nearly thirty years, in public and private practice, and, during that time, devoted an almost exclusive attention to the study of diseases, and their remedies, he has accumulated facts, and formed opinions, which have been long soliciting expression, with an urgency to which he has at length yielded, though unfeignedly distrustful of their sufficient value.

“It will be inferred from what has been said, that the present work claims to be something more than a mere compilation. In giving it the form of a General Treatise on the Practice of Medicine, it was incumbent upon the author, in order to do justice to his readers, to gather from every attainable source, the knowledge which he might deem important, and he has accordingly consulted numerous works upon the different branches of his subject, and made ample use of the materials which they afforded. But these materials have for the most part been maturely considered, have been submitted to the closest scrutiny of which he was capable, and have been re-arranged in accordance with his own best judgment.”

“As to those portions of the work which have been drawn from his own store, the author does not wish to urge any strong claims to originality. The sources of our knowledge are so various, we learn so much from books, and hear so much from others, in addition to all that may be derived from our own observations, or result from our own reflection, that it would be extremely difficult for one who has lived long, and sought knowledge wherever it was to be found, to analyze what he may possess, and determine how much, if any, originated entirely with himself.”

The treatise of Dr. Wood is divided in two parts. The first, which treats of general pathology, and therapeutics, occupies but two hundred and nineteen pages; it presents a very concise view of the constituent forms of disease, of the causes of disease, of semeiology, of the general indications of treatment, and of the general therapeutic processes. The author, within an extremely small compass, has contrived to lay down with great clearness, the general facts and principles connected with each of the subjects enumerated. This portion of the work, without any pretensions to the character of a complete treatise on general pathology and therapeutics, is a useful digest of these subjects, and a very appropriate and necessary introduction to the consideration of the pathology and treatment of the individual diseases.

Among the constituent forms of disease, the author sets down *irritation* or that marked excitement of the vital actions which falls short of inflammation, and is unattended with any change in the organic structure of the affected parts. This portion of the work will, we suspect, be the one most objected to. We admit, however, the general accuracy of the author's views upon the subject of irritation; we are convinced that the morbid condition he has described under that name, does actually occur—and however closely it may be allied in its phenomena to the first stage of

inflammation, and however liable it may be to run into the latter, it is, nevertheless, very certain that it does exist for a time and then disappear without inducing the slightest trace of actual inflammation. Hence the importance of distinguishing it from the latter. Whether, however, the term irritation is the one most appropriate to indicate this particular morbid condition, is a question we shall not stop to inquire. The entire nomenclature of pathology requires reform, and until this reform is effected, we may continue to employ the term irritation in the acceptance given to it by the author without much danger of being misunderstood.

Dr. Wood defines specific irritations to be "those in which the super-excitement deviates from the ordinary line of excessive action."

"In relation," he remarks, "to their origin, propagation, and effects, they are for the most part obedient to the general laws already stated. Their peculiarity is dependent upon some peculiar diathesis or predisposition of system, which determines special effects from ordinary causes; or, as much more frequently happens, upon peculiarity in the nature of the cause. Thus gouty and rheumatic irritation may be excited in systems predisposed to these forms of disease, by any irritant cause; while the irritation of hooping-cough is developed, in the ordinary state of the system, by a peculiar contagious principle. All contagious diseases, so far as they consist in irritation, may be placed in this category: for they are all peculiar, if in nothing else, at least in generating a poison similar in its effects to that which produced them."

The ensuing *article*, as the divisions of the several chapters in the work before us are termed, presents an excellent history of inflammation—its phenomena, progress and results; its effects upon the blood and upon particular organs—and the modes in which it may prove fatal—its nature, causes, and modification by tissue, the whole concluding with a notice of specific inflammation.

The entire account given of this constituent form of disease is, though very succinct, satisfactory, and in accordance with the received views, and with recent observations. It is somewhat surprising, however, that Dr. Wood should be inclined to admit the existence of "a vital, active power of expansion," in the capillaries; and by it to explain the congestion which always constitutes the first observable change in that series of changes which constitutes the process of inflammation. However convenient the admission of such a power may be for the explanation of many physiological as well as pathological phenomena, still we must recollect that its existence is altogether hypothetical, while many physiologists have even doubted the possibility of any of the living tissues possessing a property of active expansion.

The term specific inflammation has always appeared to us to be a decidedly objectionable one, being destitute of any precise meaning; the views expressed by Dr. Wood on this subject are, however, intelligible, and not without an appearance of truth.

"There are," he remarks, "numerous forms of diseased action which present the essential characters of inflammation, and yet differ in some respects so materially from that affection in its ordinary form, as deservedly to be considered distinct in their nature. As these differ as much among themselves as they do from ordinary inflammation, they may with propriety be denominated specific. It is not easy always to determine, whether this specific character exists in the essential nature of the inflammatory action, or depends upon some modification impressed upon it by another co-existent disease. It is possible, that, in some cases, one of these conditions may prevail, and in others, the other. Thus the scrofulous appears to differ from other forms of chronic inflammation, chiefly by the presence of tuberculous matter, or a curdy, cheese-like secretion, which owes its existence to a peculiar predisposition, and may either precede the inflamma-

tory action, and be the cause of its development, or may result from the disturbance produced by the inflammation itself, in peculiar constitutions. So also with the inflammation attending cancer, which appears to owe its peculiarity to the development of a new structure, in the midst of the healthy tissues. In syphilis, on the contrary, there is no observable morbid action or product distinct from the inflammatory, to the presence of which, in each particular part, the inflammation of that part can be ascribed, and yet both its course and results prove it to be a specific affection. In the former case, the peculiarity seems to depend upon foreign admixture, in the latter, to be inherent in the inflammatory action.

"The specific character probably always has its origin in one of two circumstances, either in peculiarity of predisposition, congenital or induced, as in scrofula, rheumatism, gout, &c., or in the character of the exciting cause, as in syphilis, small-pox, and other contagious diseases."

The ensuing article is on *Depression*, its nature and subdivisions, causes, phenomena, and effects. Depression, according to Dr. W., is that morbid condition in which there is a diminution in the vital actions of one, many, or all of the organs. He distinguishes it from debility or morbid diminution of power, and from diminished excitability.

He remarks that depression may be merely functional, without observable organic change, even to the loss of life; or it may be attended with derangement of the organization, as in some cases of softening and in gangrene. But certainly these latter cannot, with propriety, be denominated cases of depression, unless we include in that term a morbid diminution of power and of excitability as well as of action.

The cases of simple morbid deficiency of action are not very numerous—or generally of a very serious character.—In fact the author in describing the direct negative causes of depression has been obliged to include the cases in which a diminution of action and a diminution of power are both present. Thus in all the instances of a morbid condition resulting from insufficient, impoverished or deteriorated blood, he remarks, that there may not only be depression of action, but, also, reduction of power or actual debility. This is true also of cold—while its immediate effect is simply the depression of action—its long continued operation invariably produces debility and diminished excitability. So likewise of the direct positive causes of depression enumerated by Dr. Wood, warm water—certain poisons—the depressing passions—they depress not only the action, but also, the power of the living organs—at least when they act sufficiently long to induce a state of disease. This will be very evident if the reader will carefully study the author's description of the phenomena and effects of depression.

There can be no objection made to the account given by Dr. Wood of the morbid condition, its causes and phenomena, to which he has affixed the term depression.—Such a morbid condition is of common occurrence—and he has very ably delineated its features and pointed out with accuracy its causes and its effects—but it is very certain that the term depression as applied to it is a misnomer, more particularly with the author's definition of that term.

Congestion is the fourth of the constituent forms of disease described by Dr. W. This, he remarks—

"Is considered by some writers as of primary importance in disease,—but it is always an effect of some pre-existing morbid state or action; and it is a partial view which is directed to this effect alone, without embracing the other elements that enter into the complex phenomena presented by the part congested. There is probably no form of congestion which may not be traced to some one of the

morbid effects already described, and its varieties have consequently been treated of along with the other phenomena or effects of these states respectively."

The author refers congestion to three distinct sources; 1. irritation or inflammation, 2. depression, and, 3. some purely physical agency.

After referring the reader to the fact, established in the preceding portions of this chapter, that in every case of excessive capillary excitement, there is an increased flow of blood to the part affected, and an accumulation in the vessels of that part, Dr. W. observes,

"Now any excessive or unhealthy excitement is, according to the views and nomenclature adopted in this work, either irritation or inflammation, the former ending where the latter begins. The congestion, therefore, is nothing more than a phenomenon of one of these affections. But authors usually restrict the application of the term to that condition in which the vessels are merely engorged, and the peculiar symptoms of inflammation have not yet made their appearance. Congestion, therefore, in this limited sense, is simply a phenomenon of irritation. To consider it as in itself the disease, is to take a mere sign for a substance. Where is the real seat of the morbid action? Certainly not in the blood. It must, therefore, be in the vessels themselves. Now an action of the vessels, though it may cause, cannot itself constitute, congestion. This is consequently not the proper morbid action. The disease is, in fact, some peculiar modification, not well understood, of the solid tissues, of which a change in the innervation always, probably, constitutes an essential part, and which is induced by the operation of some excitant, unhealthy either in its nature or degree. In other words it is irritation."

Thus much for the author's views in relation to the nature of active congestion—views in the correctness of which all must fully coincide.—In regard to passive congestion, or that in which the blood accumulates in the vessels of a part because not carried forward so rapidly as it enters with the ordinary movement of the circulation—this morbid condition, according to Dr. W., may arise from two causes—from the want of a due degree of that action which is necessary to its transmission, that is from depression, or from some physical difficulty or obstruction.

"The depression giving rise to congestion, may be general, or confined to a particular organ. Nothing is more common than the occurrence of this condition, in diseases attended with great and sudden prostration. The heart, participating in this prostration, is unable to transmit the blood so rapidly as it is conveyed towards it by the continued action of the capillaries, and by the forces which move the blood in the veins. This fluid, therefore, necessarily accumulates in the right side of the heart, and the great venous trunks, and consequently in those organs with which these trunks more immediately communicate, viz., in the brain, liver, and through this latter organ, in the abdominal viscera generally. Instances of congestion of this kind are constantly occurring. A blow upon the head, or any severe shock, temporarily paralyzing the cerebral actions; certain mental emotions which tend to produce syncope; the chill of fevers, especially those of a typhous or malignant character, and the prostration of violent internal and stomachic spasm, all occasion internal congestions consequent upon depression in the movements of the heart. But it would be a great error to ascribe the alarming phenomena which attend these affections, the feeble pulse, the cold extremities, the pale and shrunken skin, and the frequently suspended or impaired intellectual functions, to the congestion, which is a mere effect of the prostration, and ceases when the heart resumes its usual energy. Yet there are not wanting practitioners who overlook, in great measure, the collapse of the nervous system, and the feeble movement of the heart, overwhelmed as they both are under some powerfully depressing influence, to search for the chief source of danger in the internal sanguineous engorgements, and who direct their remedies accordingly. Indeed, so far has this mode of viewing things been carried, that affections of the kind alluded to are not unfrequently distinguished by the title of congestive diseases; a mere effect being thus prominently

set forth as the characteristic and most important feature. It is scarcely necessary to say, that serious practical injury may grow out of this error, especially in cases where the depression, as not unfrequently happens, is attended with real debility, and is not a mere fugitive result of some temporary cause."

So prominent a part has congestion been made to play in modern pathological doctrines, and so extremely loose are the views entertained in relation to it by many who daily employ the term—that we have presented, in his own words, the opinions of Dr. W., as to its true character and causes. These opinions are recommended to the careful consideration of the reader—in the main they would appear to be correct—though we cannot view the denomination of a form of disease in which extensive congestion is the prominent phenomenon, so very serious an error as Dr. W. appears to consider it. It would be well if our medical nomenclature could, in every instance, be made to correspond with the actual pathological conditions existing in each disease—but until this is done the term congestion cannot be considered any more reprehensible than dropsy, palsy, diarrhœa and many others in common use.

The next article of the first chapter is devoted to a consideration of *Fever*—the term being here used in its general sense to signify a peculiar morbid condition of the system common to many diseases.

"Fever," Dr. Wood defines to be "an acute affection of the system, in which all the functions are more or less deranged; the most striking phenomena being sensorial or nervous irregularity, increased frequency of pulse, increased heat, and disinclination for food. It will be observed that, according to this definition, the essence of the affection is universal derangement of the functions."

As a definition this is radically defective; it conveys no positive idea of what is intended to be expressed by it. The author himself admits that the mere statement that the functions are universally disordered, gives no definite notion of the disease. We shall not attempt to perform the impossible task of presenting a correct general definition of those diseases to which the term fever is now generally applied by nosologists. These are invariably complex affections, of which increased heat and dryness of the surface, and increased frequency of the pulse, form during some portion of their course the prominent symptoms. The morbid heat of the surface which is so commonly present in these affections is, doubtless, the circumstance which caused the term *pyrexia* or *fever* to be applied to them.

Dr. Wood very properly distinguishes between the morbid phenomena, to which the term fever is strictly applicable, and the various diseases, called fevers, in which this state occurs, as the leading phenomena.

After pointing out the circumstances which he believes to justify us in considering fever as a disease of the whole system—he remarks, that—

"The question now arises, can this disease exist of itself, or is it necessarily connected with and dependent upon some local lesion; in other words, can it be *essential* or *idiopathic*, or is it always, and necessarily *symptomatic*? I believe that general opinion is correct in considering it sometimes as one, and sometimes as the other." Again, "all that is maintained by the essentialists is, that in fevers all the functions are disordered, without any necessary dependence upon disease in one particular part.

"In maintaining the existence of essential fever, it is not necessary to support the notion of universality in the action of its cause. This may or may not be the case. The probability is, that some causes act locally on one organ exclusively, others act generally on several organs, some universally on all. But, when an essential fever arises from a cause acting upon a particular part, the first impres-

sion, after setting the febrile movement a going, is no longer absolutely necessary to it, and may cease altogether, otherwise the fever would be symptomatic of the local affection."

Dr. Wood enters into a series of arguments to prove the nondependence of fever upon local inflammation. As it is not proposed to enter here into a discussion of the true pathology of fevers, but to present to our readers a general outline of some of the more prominent pathological views presented in the work before us, any examination of the arguments referred to must be waived. We may, however, be permitted to remark in regard to them, that, without being ourselves advocates of the doctrine against which they are directed, they have not struck us as being perfectly conclusive.

In bringing to a close his remarks upon the views advanced by Broussais, in reference to the nature of fever—Dr. Wood observes, with great truth—

"It is, therefore, by no means an established fact, that the fevers commonly considered as essential or idiopathic are gastro-enterites; much less those denominated symptomatic. Undoubtedly, fever may arise from inflammation of the stomach and bowels, but it then takes rank with the other phlegmasiæ. Nevertheless, gastritis is a frequent attendant upon fevers, much more so than was believed before Broussais called attention to the fact; and there is no doubt, that the treatment of these diseases has been favourably modified by the new light thrown upon them by this author and his disciples."

In the remaining subsections of this article the author has presented a very fair general view of the phenomena, duration and course, grade, and causes, of fever. He considers that in all cases, not purely accidental, inflammation co-existing with fever, may be considered as bearing towards it one of these three relations. It is either, 1, the effect of the fever; 2, the direct result of the same cause that produces the fever; or, 3, the cause of the fever.

The sixth article of this chapter treats of peculiar morbid products—tubercles, melanotic matters, cysts, cancer, and parasitic animals. The sketch given of the pathology of these is sufficiently accurate, and in accordance generally with the latest and best established observations.

The *causes of disease* constitute the subject of Chapter II. Under this head the author passes in rapid review, the morbid influence of heat, cold, water, light, electricity, atmospheric impurities, miasmata, epidemic influence, and contagion. The three latter of these morbid causes are those upon which the greatest discrepancy of opinion has existed and still continues to exist; hence the author's views in relation to them is a subject of particular interest. Dr. Wood is a believer in the positive existence of miasmata, produced by vegetable decomposition under the influence of heat and moisture. These miasmata are described as having an apparent affinity for moisture, in consequence of which heavy and continued rains seem to wash them from the atmosphere; floods and deep collections of water dissolve and retain them in solution; streams of running water carry them away with their current; while they are retained near the surface of the earth and over low grounds by the damp air and fogs. These miasmata are described as being influenced by the winds:—being in this manner often carried away from the place where they were extricated to considerable distances, and to elevations that would otherwise be removed from its influence.

"There is," according to Dr. W., "reason to believe, that the miasm which produces such deleterious effects upon the animal system, is capable of contributing

to the nourishment of vegetables. This, perhaps, is one of the reasons why bilious fevers prevail especially in autumn. The vegetation of spring and early summer is vigorous, and adequate to the consumption of all the products of the organic decomposition that may be going on in the soil. Among other products, the miasmatic exhalations may also be consumed. But, towards the close of the season, when many plants have run their course and begun to decline, they cease to appropriate this as well as other food, which is therefore exhaled, if it do not remain in the soil. Thus forests, also, may, in temperate latitudes, contribute to health. Besides protecting the soil from the rays of the sun, and thus moderating the temperature, they may consume miasmatic exhalations, either by absorbing them through their leaves or by taking up by their roots the rain water which may become impregnated with them as it falls. Hence the clearing away of woods is often followed, for a short time, by the prevalence of miasmatic disease. In hot climates, however, where the temperature, even in the shade, is abundantly sufficient for the copious development of these effluvia, forests are thought to do harm by the material they supply for decomposition, the dampness which they promote, and the impediment they offer to the diffusion of the poison, far more than they can do good by their consuming power. The green coating of fungous vegetation, which often covers the surface of shallow and stagnant ponds and ditches, in hot weather, serves probably as a preventive of disease, by appropriating as food the miasmata developed in the soil beneath. It is, therefore, never advisable to remove this scum, and it is not impossible that a violent rain may sometimes do harm by breaking it up."

The author admits that we know nothing of the precise nature of miasmata; although generally considered of a gaseous nature, yet chemists have never succeeded in satisfactorily demonstrating the existence of any noxious gas in miasmatic air, to which its effects could be ascribed. Dr. W. notices the theory which ascribes the poisonous influence of the air of marshes to animalcules or to microscopic fungi, in favour of which he considers that plausible arguments may be adduced. The doctrine that the true malarious agents are "electro-galvanic currents and accumulations" which produce disease by disturbing the electrical equilibrium in the body, he considers to be sufficiently refuted by the fact that such a disturbance is constantly produced under other circumstances, without giving origin to disease of the miasmatic character. He concludes as follows:

"At present we must be content with knowing the malarious influence only by its effects. I have spoken of it as the result of exhalations, effluvia, &c., but I do not wish to be understood as necessarily expressing by these terms, gaseous or æriform bodies. I merely mean by them an emanation, of whatever character it may be, whether gaseous or imponderable, organic or inorganic, single or complex, which proceeds, under certain circumstances, apparently from vegetable decomposition, and exercises a most powerful and most noxious influence over the well-being of our race. That this influence is not dependent upon any state or combination of any known agents, such as heat, cold, moisture, dryness, electricity, &c., is evinced by the fact, that, so far as these agents are concerned, combinations altogether similar to those observed in malarious cases, frequently occur without similar effects."

In relation to the *epidemic influence*, Dr. Wood enumerates the leading hypotheses advanced to explain its nature, the most plausible of which, he remarks, is perhaps the animalcular theory, namely, that atmospheric animalcules, either in the state of germs or fully organized, penetrate into the system and disturb by their presence the vital processes.

"Like the other explanations, however," he adds, "of the cause of epidemics, it must be looked upon, in the present state of our knowledge, as purely hypothetical. It is highly probable, that there are unknown influences, atmospherical, terrestrial, or both, which are as essential to the sound state of our vital functions as

those which are known, and the perversion of which must consequently occasion disease. Such may possibly be the origin of epidemics. But it is in vain to speculate upon the subject. All that we can say with certainty, is, that there must be some distempered condition of the circumstances around us, some secret power that is operating injuriously upon our system; and to this we give the name of *epidemic influence*."

An abstract of the general laws of epidemics follows, which is in accordance with the results of all the series of authentic observations upon record.

There is nothing particular to note in relation to the author's remarks upon *contagion*—the usually received views in relation to it are accurately stated, and the general laws by which its propagation and dissemination are governed presented. By the word *contagion*, Dr. W. expresses not only those poisons which produce disease by simple contact, or by inoculation, only, but those, also, which act through the medium of the atmosphere. He includes the typhus fever among the contagious affections, though he admits that while all these diseases may arise from other causes than their own peculiar contagion, this is very commonly the case with typhus fever. Upon a careful review of the circumstances under which typhus fever is usually engendered and propagated, and the facts adduced to prove its contagious nature, it will be found, we are persuaded, to have no one of the characters of those diseases known to be produced and spread by a proper contagious principle, and that it arises always from causes independent of any such principle, while it is incapable of propagating itself in a pure air with free ventilation.

Under the head of *predispositions* we are presented with a very concise but sensible sketch of the influence of temperament, idiosyncrasy, sex, age, hereditary influence, habit, and of the effects of climate, occupations, modes of life, &c., as predisposing causes of disease.

Chapter III is devoted to a general consideration of the symptoms or signs of disease, and to its course, duration and termination. The remarks of the author in relation to the value of the different symptoms are in general sound and judicious. Had we the time, however, to examine in detail his estimate of each symptom, we might, perhaps, have occasionally to dissent from him in regard to some of the indications deduced from particular symptoms, and to augment the significance of others; but there is nothing which is calculated seriously to mislead, indeed, the general accuracy of the remarks of the author upon all the subjects embraced in the section on symptomatology must be conceded.

In the section on diagnosis are contained a general sketch of the several exploratory processes employed in determining the character of diseases, without, however, entering into any examination of the several indications derived from them.

The chapter concludes with some sensible observations on the subject of prognosis.

The fourth and concluding chapter of the first part is devoted to *general therapeutics*. From this the student will acquire much that will be found extremely serviceable in the adaptation of remedies to individual cases. The remarks of the author upon the general indications, and the several therapeutic processes, are particularly sound and judicious. There are in this chapter several terms not in common use, as, for instance, *repletion* to indicate an increase of the quantity of the blood in general, or of its solid animalized ingredients, by the use of a highly nutritive diet, and

of remedies calculated to invigorate digestion and sanguification, such as moderate exercise, tonic and stimulant medicines, frictions, the cold bath, &c. Dr. Wood uses the term repletion in the sense of *filling again*, whereas its received meaning is *overfullness*.

Supersession is also used to indicate the process by which one affection is displaced or prevented by the establishment of another in the seat of it. The term can scarcely be considered as a perfectly legitimate one.

This concludes the first part of the work, which, concise as it is, contains much valuable matter and forms an appropriate introduction to the second part or that on special pathology and therapeutics.

Dr. W. divides all diseases into three great classes. The first class including those diseases which occupy the whole system at the same time, and in which all the functions are simultaneously deranged. The second class, embracing constitutional affections which may display themselves in local disease in any part of the system, but not in all parts at the same time. And the third class comprising all the proper local diseases, or those which essentially affect some particular structure or function, and in which, any general phenomena that may be presented, are only secondary.

The only diseases which are included in the author's first class, are fevers.

"No other acute affections," he remarks, "involve, like these, all the functions of the body: and if, in certain chronic affections, the system may become, in some instances, universally diseased, it is only in the advanced stages; and this universality is not, as in fevers, an essential part of their constitution.

"It will be recollected, that in the essay upon fever, in the first part of this work, the distinction between the essential idiopathic fevers, and the symptomatic, was fully recognized. It is only of the former that I propose to treat in this place. Symptomatic fever is dependent solely on the local affection, owes all its importance to that affection, and ceases along with it. In fact it is the inflammation that constitutes the disease. The phlegmasiæ, therefore, as those diseases are called which consist of inflammation and consequent fever, are ranked along with the diseases of the organs in which they are severally seated."

The following are the affections treated of under the head of general diseases:—Irritative fever, miasmatic fever, yellow fever, typhoid fever, typhus fever, plague, small-pox, vaccine disease, chicken pox, measles, scarlatina, and erysipelas.

Under the term irritative fever are included

"All cases of idiopathic fever resulting from causes of irritation, having nothing peculiar or specific in their mode of operation. The cause may or may not be sufficient to produce inflammation. All that is necessary in its action is, that it should induce an over excitement of one or more of the functions, which being propagated by nervous communication or otherwise, to different parts of the system, may throw all the functions into a state of derangement, capable of sustaining itself, for a longer or shorter time, after the direct action of the cause shall have ceased. The fever, then, does not depend, like the phlegmasiæ, upon the continuance of any local disease; but having been once excited, goes on by an independent action to its regular termination."

While the name given by the author to the fever described is somewhat objectionable, there can be no hesitation in admitting its frequent occurrence; how far it may be in all cases independent of all local disease is a question it is not our design here to inquire. This form of fever must, however, be necessarily of very short duration, often, as Dr. Wood remarks, not more than a day, sometimes only a few hours. When it continues for several days, it will, we suspect, be very generally found, that

it is kept up by positive inflammation of one or other of the internal organs, generally the stomach or intestines. Dr. Wood admits this to be the case when it runs on beyond the fourth or fifth day.

Under the head of irritative fever the author includes the infantile remittent of authors—so far as it is to be considered a distinct affection—but, he very properly observes, that under the name of infantile remittent fever there have been described

“Several different diseases, resembling each other only in their febrile and remittent character, and in the circumstance of occurring in children. Gasritis, enteritis, mesenteric odenitis, hepatitis, tubercular diseases of the lungs and bowels, and especially enteritic or typhoid fever, have been confounded under the vague title of infantile intermittent.”

To one or other of the above affections, or to some other of a similar character, Dr. W. believes all the protracted or chronic cases of infantile remittent fever, as described in the books, may be referred; indeed, even in protracted cases where the case has commenced as a simple fever of irritation; he admits that there is always reason to apprehend the existence of positive inflammation, generally within the abdomen, to which the complaint owes its continuance and danger.

The treatment recommended by the author in cases of what he terms irritative fever, is that which will receive the approbation of all experienced practitioners, and, like the therapeutical directions of Dr. W. throughout the present treatise, though marked by great caution, are peculiarly judicious.

When the remittent fever of childhood occurs in infants or very young children, the use of tartar emetic in small doses given at short intervals, as a febrifuge, is certainly very objectionable. The deleterious influence of this article upon the alimentary canal of infants has been recently pointed out by several writers.

Under the term miasmatic fever, Dr. Wood includes all the forms of fever resulting from the influence of marsh miasmata; intermittent fever; remittent or bilious fever; and pernicious, malignant, or congestive fever. Of each of these forms of fever a very excellent account is given. The strongest exception will probably be taken to the author's views in relation to their etiology; miasmata he sets down as their essential cause. He nevertheless admits that intermittent fever cannot in every instance be traced to the influence of this supposed cause, and that in many the latter gives only the predisposition, the attack being induced by any of the ordinary causes of disease. This opinion is, also, repeated in reference to remittent fever. This fever, Dr. W. would appear, however, to consider as more exclusively of miasmatic origin. He cannot admit that it is ever produced by intense heat combined with moisture. “If this were the case,” he inquires, “why should we not see it originating in the midst of our cities, where the heat is intense, and moisture often abundant?” But does not bilious fever frequently occur during the latter part of the hot season within our cities, particularly in the more filthy portions of their suburbs? We have, certainly, met with a number of cases of bilious fever in Philadelphia, under circumstances which precluded the idea of the patients having been exposed to marsh miasmata. It is true the disease of late years is of less frequent occurrence in this city than formerly, but then the heat of our summers has been less, or at least the extremely hot weather has not generally been of so long continuance as in former years.

The account given of the several forms of fever comprised by the author under the name miasmatic, is full and accurate, and the plan of treatment laid down for each, judicious. As to the circumstances under which the administration of quinia is indicated, Dr. W. remarks—

“There is a simple rule which, I think, will serve the practitioner as a sufficient guide in relation to this disputed point. Whenever the intermission is complete, in other words, when it is quite exempt from fever, quinia may be given without hesitation, if the stomach will support it. If any existing inflammation is of so low a grade as not to induce symptomatic fever, it will scarcely oppose an obstacle to the antiperiodic action of quinia, and will be much more likely to yield after the paroxysms have ceased. Indeed, such inflammation is probably often supported by it, if it do not originate in, the fever of the paroxysm. When the inflammation is so extensive or severe as to induce fever, though the disease may have the paroxysmal form, yet it will present rather the aspect of a remittent than an intermittent, as there will be fever steadily throughout the interval. In such cases the use of the quinia should be preceded by depletion, and by other means calculated to reduce the inflammation; but as soon as a distinct intermission has been obtained, there should be no longer any delay in resorting to the antiperiodic remedy. When the inflammation is attended with typhoid symptoms, as not unfrequently happens in the Southern and Western portions of this country, especially in the winter, when typhoid pneumonia supervenes upon, or becomes complicated with intermittent fever, it will be proper not to wait for a distinct intermission, but to administer the quinia as soon as the nature of the disease is clearly ascertained. I have seen the happiest effects result from this treatment, and have been informed by physicians residing in miasmatic regions, that they habitually employ it with great advantage. Not only is the intermittent interrupted, but the inflammation itself puts on a more favourable character under its influence.”

The remarks of the author upon the doses and mode of administering the quinia are equally judicious.

The account of the remittent or bilious fever is particularly excellent. Although differing from the author on some points in regard to the pathology of this form of disease, we still accede to the correctness of his views generally. His therapeutical directions are judicious and correspond with those recommended by the best writers upon the disease.

In pernicious, congestive, or malignant fevers of the intermittent or remittent type, Dr. Wood denies that venous congestion of the internal organs is the source of danger, but he considers, that it is in the peculiar state of the innervation that we are to look for the source at once of the symptoms and the danger.

“In the pernicious fever, the innervation of the extreme vessels fails, and they cannot, therefore, perform their part effectively in the circulation. The blood enters them with difficulty, in their enfeebled state, and is carried through them very slowly. Hence, the paleness, and hence also the lividness of the surface, owing to the stagnation of the blood. From the same approach to nervous death in these vessels, they allow the watery portion of the blood to ooze through them, almost as through dead membrane. Hence the profuse sweats. The coldness obviously arises from the languid circulation, and deficient change of blood. This condition of the capillaries may coexist with considerable power in the heart, for the want of innervation is not necessarily equal in the whole circulation. But sometimes the deficiency is experienced first and specially by the heart. In such cases, syncope or a tendency to it is the prominent symptom.

“The function of respiration sometimes suffers from the same deficiency of innervation. The pulmonary capillaries cease to carry forward the blood with the usual rapidity, and the due aëration does not take place. Hence, the feeling of oppression of chest and want of breath, the deep sighing, &c.”

The oppression of stomach and copious vomiting are accounted for upon the same principles.

"There is no feeling of the stomach," Dr. W. remarks, "unless it may be excessive spasm, which is more insupportable than that arising from deficient innervation. This can be readily understood by those who have experienced the distressing sensations of a half paralyzed limb. The bloody serum or pure blood, discharged from the stomach and bowels, escapes through the coats of the vessels, exactly as blood percolates through the tissues after death, with this exception, that, as the *vis à tergo* still continues in some degree, it adds a vital expelling force to that of mere physical transudation. The alimentary canal may be said to sweat, like the external surface."

Dr. W. is not disposed to deny the existence of inflammation, in some degree, in the gastro-intestinal mucous membrane, but considers it quite insufficient to account for the symptoms. Much of the softening of the tissue may, he thinks, be ascribed to depressed vitality, and much of the discoloration to the stagnation of blood, like the livid or purple colour of the skin.

The thirst and sense of internal heat he denies to be signs of congestion or inflammation.

"Thirst," he remarks, "is a common accompaniment of all conditions of disease in which the capillaries are emptied of their blood, and such is undoubtedly the source of it here. The heat can be referred only to morbid nervous influence. That there is no real increase of temperature within, is inferred from the state of the tongue. Besides, the sensation is not confined to the internal parts. I have known patients to complain, under these circumstances, of distressing heat of surface, when their skin was positively much below the healthy temperature. This is merely another example of morbid innervation. It appears, then, that this defect or derangement of innervation lies at the basis of all the morbid phenomena of the organic functions. The congestion necessarily follows the prostration of the active circulating forces. The pulmonary capillaries, the heart, and the systemic capillaries are all enfeebled; the blood, therefore, collects in the veins and in the great internal organs, especially in those connected with the portal circulation. Hence the congestion of the liver and spleen. When the circulatory movements return with their wonted activity, under the restored innervation, the congestion is speedily dissipated.

"In the cerebral cases, the deranged innervation is experienced primarily and chiefly in the lobes of the brain. The organic functions are at first comparatively unaffected, the heart often continuing to act with energy, and the surface to retain its warmth, when the patient is quite insensible. That the affection is chiefly nervous, is to be inferred from its periodicity. There may often be congestion; there may sometimes be inflammation of the brain. But the presence of an excess of blood is probably due less to increased determination, than to stagnation in the capillaries." "The brain differs from other organs in the circumstance of occupying a closed cavity, into which atmospheric pressure alone would force the blood, so that feebleness of the capillaries cannot here be followed by paleness as upon the surface. The vessels must always be full, or the vacuity must be compensated by effusion. Redness, therefore, and serum in the ventricles are not necessarily signs of over excitement. But I am not disposed to maintain, that the cerebral affection in these cases is certainly the result of diminished sensorial action. All that I would maintain is, that the affection is essentially nervous, and that upon this the danger depends. The patient dies, not because he has too much blood in his brain, but because the brain becomes incapable, from the direct influence of the morbid cause, of performing the functions essential to life. This question is not merely speculative. It is on the contrary highly practical, and its decision, one way or the other, may greatly influence the treatment. If the disease be considered in the light of apoplexy or cerebritis, copious bleeding would suggest itself as the appropriate remedy: if it be nervous, we must look for safety to some means capable of strongly impressing the nervous system."

The foregoing extracts are rather long, but the subject to which they relate is a most important one to American practitioners, or at least to a large body of them; the pernicious form of intermittent fever being of frequent occurrence amongst us, constituting in some degree the endemic of extensive sections of our country. The views generally entertained of its pathology are, however, vague and confused; hence, whatever may be offered in relation to this point by one who, like the author of the treatise before us, occupies a position in the profession, which necessarily gives to his opinions very considerable weight, will be read with deep interest.

The article on yellow fever is among the best in the treatise. The disease is described with great accuracy. Its peculiar characteristics and course, which separate it, as it were, from all other febrile affections, and mark it as a specific malady, are well delineated—the more prominent deviations from the form under which the disease ordinarily presents itself being concisely noticed. The account of the anatomical characters of the disease is sufficiently full and accurate, while the views expressed by the author in relation to its etiology are in the highest degree sound and judicious.

Dr. Wood considers that the causes of bilious fever and those of yellow fever are essentially different. Though heat is indispensable to the production of both, yet their localities, and other circumstances in relation to their prevalence, are not the same. The symptoms of the two diseases are also strikingly different, and their anatomical characters are far from being identical.

The contagious nature of yellow fever is denied by the author and a brief summary given of the facts by which the arguments in support of its propagation by a peculiar contagion are opposed.

The disease is evidently produced by a peculiar poison generated by the decomposition probably of animal matter, hence it is the peculiar endemic of cities, garrisons, and occasionally of ships.

"In all these situations," Dr. W. remarks, "we have animal effluvia, or animal excrement, often mingled with vegetable matter in decay. Along wharves, and in docks into which the common sewers empty, we have these conditions in an eminent degree, ready to be called into operation when a high and long continued temperature shall penetrate to the bottom of the water, and set fermentation into movement, and it is well known, that these are the parts of cities where the yellow fever is most apt to break out."

"But," the author remarks, "if the cause be a miasm, as supposed, how does it happen that this is not generated wherever the above conditions mentioned exist? Why, for example, is it not produced in Calcutta, Cairo, Rome, &c., as well as at Havana, New Orleans, Philadelphia, or Gibraltar? Why is it occasionally developed in isolated spots, upon the arrival of an infected ship, though never known to exist in these spots before? Why is it sometimes communicated from one ship to another? We can easily understand, that a vessel with foul bilge water in her hold, and a crowded crew, in a hot climate, may generate a febrile miasm, or that another vessel sailing from an infected port may carry the poison shut up with the air under its hatches. We can also understand that either of these vessels, arriving in a port, may give the disease to those who may actually visit it, and breathe its foul air. But how explain that the disease shall then spread over a considerable space, and prevail for a considerable time, after the vessel has been thoroughly cleansed or removed, and all the air proceeding from her has been thoroughly dissipated?"

Two theories have been advanced to explain these apparent anomalies; either that a peculiar product is generated under the circumstances before mentioned, which is capable of acting as a ferment when it finds the proper

materials to act upon, and of reproducing itself, or a substance identical with it, out of these materials, as yeast is generated during the vinous fermentation which yeast has set in motion; or, that the morbid cause is a living, organized, microscopic being, either animal or vegetable, which, produced out of pre-existing germs, under favourable circumstances, is capable of propagating itself indefinitely when these circumstances exist. Both of these theories, as the author properly remarks, require further proof before either can be received.

There can be no doubt, that Dr. Wood is correct in considering the yellow fever to be an entirely peculiar and distinct disease. "What are the precise pathological conditions essential to it are unknown. It is highly probable that the blood is preeminently in fault, being deranged by the immediate action of the morbid cause."

The directions given by the author for the treatment of yellow fever, are founded upon the results of the general experience of those physicians who have had the best opportunities of studying the disease.

Under the name enteric fever Dr. W. describes the typhoid fever of Louis. He objects to this latter term, because the disease is not essentially typhoid—very often running its whole course without any symptoms analogous to those which characterize typhus fever—and, because, any other febrile affection may equally assume the typhoid form. The term enteric, adopted by the author, is merely intended to express the fact, that this fever is distinguished from all other idiopathic fevers by the frequency and extent of intestinal disease—the latter being as characteristic of it as the eruption is of the small-pox.

After a very good account of the symptoms and course of enteric fever, and a notice of its varieties and complications, the author describes very fully its anatomical characters. He next enters into an examination of its causes. From the circumstances under which the disease most usually occurs, it might be inferred that it is produced by the effluvia from the human body, or human excretions in a state of decomposition. But it also not unfrequently originates in the pure air of the country, and Dr. W. has met with it in the healthiest regions of our middle states, even among the mountains. Although he has seen much of the disease in private and public practice, he never knew an instance in which it could be clearly shown to be the result of contagion.

"On the whole," the author remarks, "the most rational view of the etiology of enteric fever, in the present state of our knowledge, seems to be, that an inherent predisposition to this disease exists in many persons, analogous, in some measure, to the tuberculous, the gouty, and the rheumatic predisposition, which is liable to be called into action by various exciting causes, perhaps, by almost any cause capable of considerably disturbing the vital functions, but that all persons do not have the predisposition, and that it is generally exhausted by one attack of the disease. Hence its occurrence after fatigue, exposure to heat and cold, mental anxiety, &c. It is not improbable, that the effluvia engendered by decomposing animal excretions, the contagious miasm of typhus itself, epidemic influence, and even marsh miasmata, may act as exciting causes of the disease in the predisposed."

Dr. W. does not consider the intestinal disease as having any agency in the production of the fever or of any of its leading phenomena; he considers the greater probability to be, that the disease of the intestinal follicles is a sort of internal eruption, like that of small-pox upon the skin, and like it, merely a characteristic attendant upon the complaint. It is not, in-

deed, he remarks, certain, that this follicular affection is absolutely essential.

A very judicious exposition is given of the proper therapeutic management of this form of fever.

Typhus fever is next treated of. The account of its symptoms, course, and anatomical characters is full and accurate. The author refers its production to the vitiated air resulting from the crowding of human beings in confined places, but believes, that when it is once thus generated, it may be propagated by contagion. In regard to its nature, he considers it to be certainly one of those diseases which are most clearly independent of any local lesions. The probability is, that the poison is absorbed, and at once depresses the powers of the nervous system, and vitiates the blood. All the local congestions, and the low imperfect inflammations which attend the disease, are obviously secondary.

The directions for its treatment are marked by prudence and judgment.

After a short account of the plague, the several eruptive diseases come under consideration. Small-pox is treated of at great length and very ably. The vaccine disease receives all the attention its importance demands. The views of Dr. W. in regard to the protective powers of vaccination are perfectly sound. He does not believe in the supposition that the protection it affords against small-pox is liable to wear out in time. The cause of its insufficient protection in certain cases, may, Dr. W. thinks, be explained by the greater tendency to varioloid disease during the epidemic prevalence of small-pox, and its greater frequency between the ages of fifteen and twenty than at any other period of life. He strongly urges the propriety of universal re-vaccination, as the means, not only of promoting the comfort, and possibly of saving the life of the individual, but also of preventing the spread of small-pox, and of ultimately eradicating it, if not from the globe, at least from extensive districts.

An excellent account is given of measles and of its therapeutic management.

Scarlet fever follows—its symptoms and course are minutely and accurately described—and its several varieties carefully pointed out. Dr. W. believes the disease to be the result of a specific contagion, and yet he admits that it may occur as an epidemic independently of communication with the sick. The evidences of its contagious character are, however, all must admit, not of a very positive nature. The therapeutical directions for the management of this important malady, as laid down by the author, are particularly judicious.

Erysipelas forms the subject of Article XII., and completes the list of the general diseases.

The description of its symptoms, course, and varieties, is well drawn up and sufficiently minute. In regard to the causes of the disease, after enumerating the usual exciting agents by which it is induced, the author remarks, that none of these alone are capable of giving rise to erysipelas. He infers, therefore, that there must be something which predisposes the individual to this particular form of disease rather than to others. Such a predisposition appears to be possessed by some persons constitutionally, while not unfrequently, the predisposition is the consequence of disease, or of influences which tend to depress or debilitate the system, even without producing open disease.

“There is also,” he remarks, “some unknown condition of the atmosphere which greatly favours the production of the disease; so that, when this condition

exists, the slightest causes will give rise to this form of inflammation, which, on other occasions, have no such effect. It is especially apt to be felt in large infirmaries, but is, nevertheless, independent of the ordinary circumstances of these institutions."

The second class of diseases includes, according to the arrangement and nomenclature of Dr. Wood, constitutional diseases. The author admits, that this title does not exactly designate the affections to which it is applied, —rheumatism and gout; these are constitutional affections, which may display themselves in local disease of any part of the system, but not in all parts at the same time. This want of universality excludes them from the first class; and, as they frequently occupy several different organs at once, and may pass from any one organ to any other during the same attack, they cannot be placed in the category of affections strictly local.

Under the name of rheumatism, or rather, as one of the varieties of the disease, the author includes the neuralgic pains of the muscles, or viscera, with derangement of function in the organs affected, which have been supposed, by some, to be connected with spinal irritation. There is some doubt, however, as to the accuracy of considering diseases of so very distinct a character as the last described affection, and the inflammatory affection of the joints and fibrous tissues to which the name of rheumatism has been ordinarily applied, as mere varieties of one and the same disease. Dr. W., it is true, rejects the doctrine which refers rheumatism, in any case, to ordinary inflammation, the peculiarities which it may exhibit being attributable to the tissue upon which it is seated. The disease, he remarks, is not necessarily inflammatory. "It is often purely nervous, and no explanation of its nature is admissible, which does not take this fact into consideration."

Now, we should be inclined to confine the term rheumatism, if not permitted the adoption of a more appropriate one, to the cases marked by inflammation, and to refer the purely nervous classes to the neuralgiæ. The author, we apprehend, is mistaken when he asserts that ordinary inflammation, *occupying precisely the same parts* as those affected in rheumatism, presents different phenomena.

Dr. Wood's views of the pathology of rheumatism are thus expressed:

"All that we know of the real nature of the disease is, that it is peculiar, and that it owes this peculiarity, not to the character of the cause, but to some unexplained condition of the system, called the rheumatic predisposition or diathesis. I am inclined to the opinion, that this diathesis is itself a morbid state, in fact, the true disease, and that the irritation and inflammation by which it is recognized, are merely symptoms of its full developement. That the rheumatic differs essentially from ordinary inflammation, is shown, chiefly, by its shifting character, its disposition to alternate with mere irritation or functional disorder, and the almost entire absence of any tendency to suppuration, even in the most violent cases."

Although the pathology of rheumatism, laid down by the author, is thus vague and indefinite, no objection can be made to the plan of treatment recommended by him, in its different grades and stages. This is bold and decisive, and in all its details in the highest degree judicious.

In regard to gout, a very admirable account of which is given, Dr. W. rejects all the hypotheses by which its pathology has been attempted to be explained, without, however, offering one to supply their place.

"The fact, I think," he candidly confesses, "is, that its nature is yet unknown; and, though the uneasiness of a state of acknowledged ignorance will probably continue to induce the formation of hypotheses in which the mind may find a

temporary rest; yet, until some new light is obtained, they can be nothing more than conjectures, which will, probably, in the end, prove to be without foundation."

There is nothing peculiar in the treatment of gout laid down by the author—it is marked by great caution and good sense, and has the sanction of many of the best writers on the disease.

The third class of diseases, according to Dr. W.'s arrangement, is that of the local affections—it embraces all those which have their seat, primarily or essentially, in any one of the organs, tissues, or functions. The first section is devoted to the diseases of the digestive system; and the first subsection, to the different forms of inflammation of the mucous membrane of the mouth—inflammation of the tongue—the morbid states of dentition, and the diseases of the teeth, under the general heads of tooth-ache, and falling of the teeth. A very concise, but at the same time very good account, is given of these several affections and of the treatment proper to be pursued in each. Upon the subject of gangrene of the mouth in children, the account given by the author is scarcely full enough, considering the importance of the disease; he has certainly not described all of the forms under which it usually presents itself. By a reference to the writings of the Dutch, Swedish, and German physicians, much valuable matter in relation to the etiology, leading varieties, and treatment of gangræna oris may be obtained.

The second subsection of this class embraces the diseases of the fauces, pharynx, and œsophagus. These are likewise noticed with great brevity. Their pathology and treatment are, nevertheless, accurately delineated, and perhaps, with sufficient fullness to satisfy the intelligent and experienced practitioner; but, if we are not mistaken, for the instruction of the student, and for the use of the younger members of the profession, more minute details would have been desirable.

The third subsection of class 3d, includes the diseases of the stomach. Of gastritis, both in its acute and chronic forms, the author has presented a very full and satisfactory account. This is followed by a short but very interesting notice of cancer of the stomach. The author then presents an account of what he terms *irritation of the stomach*.

"By this term," he remarks, "is meant any morbid excitement of the stomach, not amounting to inflammation. Instances of this disorder are exceedingly common, although not usually associated by writers under this name, and often too much neglected in practical treatises. Though seldom in itself dangerous, irritation of the stomach is, in many of its forms, very distressing to the patient, and, if not arrested, very often terminates in gastritis, either chronic or acute. It presents itself in a variety of forms, dependent on the tissue or function affected, the nature of the cause, and the previous condition of the stomach or the system. It sometimes affects the capillaries especially, sometimes the nerves exclusively, and often, both at the same time. Though most frequently merely the antecedent of inflammation of the stomach, and very often only a secondary or attendant affection of other diseases, it yet has, in numerous instances, an independent existence, and therefore requires an independent consideration."

Irritation of the stomach, Dr. W. treats of, 1st, as arising from congestion of the portal veins. This is a frequent antecedent to bilious fever, cholera morbus, jaundice, and vomiting of blood,—and the author thinks that there is reason to believe, that some of these diseases might often be prevented by its timely treatment. 2d, as arising from the action of the gastric contents—3d, as arising from gout and rheumatism—4th, as arising from spinal disorder, &c.—5th, as arising from sympathy. He also considers gastric irritation, in the varieties afforded by its varying phenomena.

These, he remarks, frequently occur separately, or in distinct groups, having the aspect of distinct diseases, and as such, are sometimes treated of by authors. It is true, that they are often variously mingled together, and that they not unfrequently occur merely as symptoms of other diseases. These are cardialgia, gastralgia, pyrosis, spasm of the stomach, nausea and vomiting, sea-sickness, sick headache, and morbid appetite; each of which is separately treated of by Dr. W. The various phenomena, or groups of phenomena described above, are certainly of frequent occurrence, and many of them give rise, often, to very great suffering, and resist, occasionally, the best directed plans of treatment. How far the author is correct in ascribing them to simple irritation of the stomach, is a subject of doubt;—of many of them the pathology is still involved in obscurity, and others are evidently merely symptomatic of disease of the stomach or some other organ, or disturbances of the functions of the stomach, dependant often upon diseases located in remote parts.

It is not to be regretted, however, that Dr. W. has treated formally of them; his remarks, in relation particularly to their therapeutic management, are particularly interesting and cannot fail to be useful to the young practitioner.

The next affection of the stomach treated of is indigestion or dyspepsia.

“It can scarcely be doubted,” the author remarks, “that a depression of the action of the stomach, or a diminution of its power, constitutes, in many instances, the basis of a distinct pathological state, entitled to rank as a disease.”

It is to this state that he restricts the name of dyspepsia—the depression of stomach being referred to a withdrawal of its ordinary supply of nervous influence, or to some immediate sedative influence upon it, or to positive debility from the loss of excitability, consequent upon excessive stimulation. In either case, the stomach performs less efficiently its appropriate function.

The rationale of the symptoms of dyspepsia given by Dr. W., are extremely plausible, and form the basis of a systematic treatment, which the author lays down with great judgment.

The fourth subsection, class 3d, comprises the diseases of the bowels. The inflammatory affections are accurately described, and their proper treatment minutely detailed. Dr. W. considers, that in its ordinary form there is no just reason for supposing that dysentery is capable of being propagated by contagion.

Under the term of irritation of the bowels, the author includes diarrhœa, the different forms of colic, flatulence, spasms of the rectum, and hemorrhoids. Each of these diseases is accurately described. Although it is certain that they cannot all be ascribed to simple irritation of the bowels, and many of them are merely the symptoms or effects of other diseases, still the pathological views of the author in relation to them will be found to be more correct than the general denomination under which they are arranged would, at first, lead us to expect. Thus the frequent dependence of diarrhœa upon inflammation of the intestinal mucous membrane and upon hepatic derangement, is fully recognised; so also is the production of colic from derangement of the biliary organs, and from inflammation of the mucous or peritoneal coat of the bowels, clearly stated. The treatment directed in each of the affections included under this head is that which general experience has shown to be the most successful. The modification in our remedies demanded by the particular character of the different forms under which several of those affections present themselves is carefully indicated.

Subsection 5 of Class III, embraces those diseases in which the stomach and bowels are conjointly affected. These are the different forms of cholera, flatulence, and peritonitis.

In regard to the cause of epidemic cholera, of which the author has presented a very excellent and full account—he conceives, after a review of its more prominent phenomena, that,—

“We are driven to the supposition, that the poisonous cause of the disease is capable of producing all the characteristic phenomena of cholera by its direct action. What is the precise nature of this action cannot be said; but the nearest approach to a rational explanation appears to him to be that which considers it generally sedative to the system, especially to the circulation, but irritant to the alimentary mucous membrane. This is precisely the poisonous action of tartar emetic; and the cause of disease, which, within his observation, has approached nearest to the collapse of cholera, and which resembled it so closely as to have been mistaken for it at first by a practitioner who had much experience in the complaint, occurred in a female who had taken a poisonous dose of that antimony.”

The author’s account of cholera infantum, its prevention and treatment, and of the pathology and therapeutical management of peritonitis in its acute and chronic forms, contains an excellent digest of the present state of our knowledge, and of the results of general experience.

The second section of Class III. embraces the diseases of the absorbent system. Inflammation of the absorbent vessels and glands—external scrofula and diseases of the bronchial glands, and of the mesenteric glands; a concise account of each of which affections is given—and the usual remedies adapted to each pointed out.

The third section is devoted to the diseases of the respiratory organs. Previously to entering upon a consideration of the individual affections comprised in this section, attention is directed to those means of diagnosis which are applicable to most of them, namely, auscultation, percussion, inspection, manual application and measurement. The nature of each of these means and the facts deducible from their application respectively are clearly and accurately pointed out.

Few diseases have been more carefully studied than those dependent upon inflammation of the different tissues of the lungs—to their investigation the industry and talents of a number of distinguished physicians have of late years been directed, who have left but few points of any importance in relation to their pathology or treatment upon which any very important difference of opinion can now exist. The result of these investigations is very fully embraced in the account given by Dr. Wood of the diseases referred to; the section presents a very accurate and lucid exposition of the present stage of our knowledge in relation to their several forms, diagnosis, etiology, anatomical characters and therapeutical management.

In relation to blood-letting in acute bronchitis, the author remarks:—

“When there are headache, oppressed breathing, and considerable pain or soreness in the chest, or any one of these symptoms, in a high degree, along with a strong and excited pulse, blood should be taken from the arm, to the amount, in robust persons, of sixteen ounces, but generally less bleeding is required than in the serous inflammations, and the great majority of cases do very well without it. Occasionally, but not often, the bleeding may be repeated. In relation to the loss of blood, it is highly important to have reference to the constitution of the patient; and the discharge should always be stopped, however little may have been lost,

when the pulse begins to fail. In feeble patients, it is of the utmost importance to reserve sufficient strength for the expectoration of the pulmonary secretion."

Under the name of croup Dr. W. very properly remarks, that two very different forms of disease have been confounded, the one being unattended with the formation of a false membrane in the larynx and trachea, and although of an extremely acute grade, still, in a vast majority of cases, yielding with great facility and with considerable certainty to the early application of remedies, and which the author treats of under the name of catarrhal croup; while the other form of croup is attended with an albuminous or fibrinous exudation upon the inner surface of the air passages, giving rise to the formation of false membranes, and which under the most judicious course of treatment is extremely fatal, even when attacked in the early stage, and almost necessarily so in the advanced stage. This the author treats of as pseudo-membranous croup.

Dr. W. denies that the term asthma is synonymous with dyspnœa; he would restrict its use to indicate a peculiar affection, the pathological condition of which is "that constriction of the bronchial tubes which sometimes occurs independently of inflammation or other organic lesion, and even of congestion, and which, though not positively demonstrated to depend upon muscular contraction, is generally believed to be so, and is therefore considered as spasmodic." It is only, however, when the spasm in the respiratory passages is the predominant affection, that it is entitled to rank as a disease, and take the name of asthma.

"All those cases even of spasmodic and paroxysmal dyspnœa, in which bronchial inflammation is the most important constituent, are not, in this work, treated of as examples of asthma, but are referred to bronchitis. In some instances, there is reason to believe that asthma is purely nervous or functional, and quite independent of any other disease: but it is probably more frequently associated with some degree of bronchial inflammation or other organic affection, which serves to call it into action. In the latter cases, it does not lose its claim to be considered as a disease, so long as the exciting cause is merely subordinate."

The remaining diseases of the chest are treated of with great ability, and in general with a fullness commensurate with their importance. The article on phthisis pulmonalis is a most excellent and interesting one. After an exposition of its anatomical characters, its symptoms and course are minutely and accurately delineated, and the variations in each of its prominent symptoms presented in different cases pointed out; the author then enters into an examination of its nature and causes, the facts in relation to which are clearly and concisely stated. In speaking of the prognosis Dr. W. admits, that in the very great majority of cases this is certainly unfavourable, yet he does not believe that phthisis is in all cases necessarily fatal; but that in one stage or another, it is occasionally cured or at least ends in perfect recovery; and the facts adduced in support of this opinion, though few in number, are clear, positive and conclusive.

"The probabilities," he remarks, "upon the whole, are that each tubercle has a tendency towards health, and if alone, would in time end in perfect recovery; so that the great fatality in phthisis consists in the continued predisposition which causes the constant or frequently repeated deposition of other tubercles, before those first deposited have had time to run a favourable course. We may, therefore, always entertain some hope, if applied to in the early stage, in cases of no great severity, of seeing a cure effected; and even in the second stage, when the diathesis is not very strong, or the local disease extensive, there is no reason for absolute despair. Even in cases which appear to offer no chance of ultimate recovery, we may hope to be able very much to prolong the duration of the complaint, and sometimes even to add years to a valuable life."

For the fulfilment of the first great indication in the treatment of phthisis, to prevent, namely, the further deposition of tubercles or tuberculous matter, Dr. W. places no confidence in any of the articles upon the list of the *materia medica*. But for the correction of the tuberculous predisposition and to obviate the influence of the causes which excite the predisposition into action, he depends mainly upon hygienic measures; daily, vigorous exercise in the open air—particularly on horseback—a proper regulation of the temperature of the body—flannel next the skin, and sufficient exterior covering—a proper temperature of the apartment when within doors—a removal during the winter to a warmer climate—and during the intense heat of summer to a cooler region—a nutritious easily digested diet;—cheerfulness and activity of mind, short sea voyages, &c. The whole of the author's directions on these points are sound, judicious, and practicable.

The fourth section of Class III. is devoted to the diseases of the circulatory system—and the first subsection to diseases of the heart. The consideration of these is prefaced by an account of the means for their exploration which modern investigations have placed in our hands, illustrated by a very excellent diagram.

The inflammatory are the first of the forms of cardiac disease treated of. A very full and excellent account is given of peri and endocarditis, and of the more rare form of cardiac inflammation, carditis, or inflammation of the substance of the heart. Chronic disease of the valves of the heart is next considered and receives all that attention which its frequency and importance demand. Hypertrophy and dilatation of the heart follow. When we say, as we can with great justice, that the articles devoted to each of these subjects embraces a digest of all the recent facts in relation to their pathology and management, it is unnecessary to enter into an examination of the views advanced by the author in relation to either of these diseases; they are those of the best authorities in reference to the subjects treated of, well arranged and clearly expressed.

A brief sketch is given of atrophy, softening, induration, degeneration, rupture, and polypous concretions of the heart. Under the head of malformations is embraced the consideration of cyanosis. The author points out the true cause of this affection—namely, a patency of the foramen ovale or some other malformation by which a communication between the contents of the two sides of the heart are made to commingle, with an impediment to the entrance of the blood into the lungs, or an obstruction of the pulmonary artery, or any impediment to the performance of the respiratory functions, as in pulmonary congestion from various organic cardiac lesions—in consequence of which the venous blood being caused to predominate, its hue is given to all the tissues.

A very interesting article is given on the functional or nervous diseases of the heart. A proper acquaintance with these is all important on the part of every practitioner; not only, as Dr. W. very correctly remarks, are they in themselves often the source of much inconvenience and distress, and occasionally, even of danger—but, by simulating very closely some of the more serious of the organic diseases of the heart, they are apt to deceive, at first sight, the inexperienced, while they cause much anxiety and apprehension to the patient. There are even cases in which a correct diagnosis demands the exercise of no little skill and judgment. The affections to which the term functional or nervous is applied, are palpitation, syncope, and cardiac neuralgia, or angina pectoris. The views of the author in relation to this latter complaint are thus expressed—and bear, to say the least of them, strong marks of probability.

"Neuralgia of the heart and angina pectoris are considered by some as different diseases; but it is impossible to point out any important distinction between them. Though angina has frequently been found in connection with organic disease of the heart, yet frequently, also, no such affection has been detected upon examination after death, so that it must be considered as essentially nervous. Angina is, therefore, a painful nervous affection, and this is the very definition of neuralgia. If it be maintained that angina appears under a peculiar characteristic form, differing from other painful affections of the heart, it may be stated in reply, that though there may be striking differences between two extremes of any affection which admits of diversity, yet this is not a valid reason for constituting them into distinct diseases, especially when, as is the case with the complaint in question, the extremes are connected by a chain of insensible gradations so that they cannot be separated without doing violence to some link. The only admissible distinction between the terms appears to be, that, while neuralgia shall be considered as embracing all the purely nervous cardiac pains, angina pectoris shall be limited to the more violent and dangerous."

The next subsection comprises the diseases of the arteries. After an account of inflammation and ossification of the arteries, the author treats of aneurism. A tolerably full account is given of its varieties, its diagnosis, as well when seated externally as when it occurs in the thoracic or abdominal cavities, and of its medical treatment.

An interesting article follows on arterial palpitation. It is only in the abdominal aorta that the increased throbbing or pulsation to which the author has given the name of palpitation has attracted particular attention, and it is to this that the notice before us is confined. The remarks of Dr. W. upon its causes and treatment are concise but judicious.

The third subsection is devoted to the diseases of the veins. Under inflammation of the veins is included an account of phlegmasia dolens—which, Dr. W. remarks, has been recently traced, if not with certainty, yet with a considerable degree of probability to phlebitis as its source. We believe that the dependence of phlegmasia dolens upon crural phlebitis is now admitted by the most authoritative pathologists. In this article a brief notice is also given of what have been termed by some metastatic abscesses—the dependence of these upon inflammation of the veins is by no means, however, conclusively established. The account given of the two last named affections is very concise, and can scarcely be considered as in all points satisfactory.

Chronic phlebitis and varicose veins receive both a short notice.

The very important subject—the diseases of the blood—is considered in the fourth subsection. Plethora, or a morbid increase of those constituents of the blood upon which its nutritive and stimulant properties depend, and to which it owes its peculiar character, with or without an increase of bulk. This can scarcely be denominated disease—although it unquestionably constitutes a very strong predisposition to it.

Anemia, whether considered as the result of various diseases, or as constituting, in its chronic form, a morbid condition of the body, which may be considered in some degree as the disease demanding the first and principal attention of the physician, is next considered. The last named condition constitutes the chlorosis of nosologists, a very excellent account of which is given by Dr. W.

Scurvy is the next disease treated of as dependent upon a depraved state of the blood—a very full digest is given of its phenomena—anatomical characters—causes, treatment and prevention. The views of the author in relation to the nature of purpura, which is considered immediately

after scurvy, are very undecided—he considers it to be probably a disease of the blood.

“If,” he remarks, “it be true, that an excess of red globules relative to the fibrin of the blood favours hemorrhage, we have a plausible explanation of the phenomena of the disease. In the cases attended with vigorous health and a full, strong pulse, there may be an excess of the red globules, and the normal quantity of fibrin, as in plethora; in those of debility, the fibrin may be deficient, with the red globules in their normal amount, as in the blood of malignant fevers. In the former case, the disease would rank with the active, and in the latter with the passive hemorrhages.”

The directions for the treatment of purpura correspond with the practical experience of the major part of the profession.

The diseases of the blood and blood-vessels conjointly are next considered—Dr. W. considers first under this subdivision the subject of hemorrhage generally. He very properly objects to the division of hemorrhage into symptomatic and idiopathic; strictly speaking, hemorrhage is “always and necessarily symptomatic;” nor does he consider the division into active and passive better founded, if intended to be of universal or even of general application.

“There are,” he remarks, “undoubtedly, many cases of hemorrhage, in which the discharge appears to be partially associated with a state of local or general excitement, and a display of increased vital force, and others which have their origin in a quite opposite condition; but there are also many in which neither of these states can be said to exist, and we not unfrequently meet with cases in which general debility is connected with irritation or excitement in the part affected.”

The different pathological conditions in which hemorrhage is exhibited as one of the characteristic symptoms or results, are enumerated as follows;

1. A solution of continuity in the coats of the blood-vessels, in a previously healthy condition. 2. A solution of continuity in the coats of the blood-vessels, in a previously morbid state. 3. Active exhalation from the vessels, without solution of continuity. 4. Passive exudation without solution of continuity.

The morbid states of the circulation in hemorrhage are described as morbid activity of the circulation from irritation of the blood-vessels. Increased vigour of circulation from hypertrophy of the heart. Derangement of the circulation dependent upon some impediment to the circulation through the venous trunks. Then follows a consideration of the morbid states of the blood.

Under these heads the author has presented a succinct account of all the known facts in relation to the immediate and many of the predisposing causes of hemorrhage. The whole article, as well in regard to the general pathology, the leading forms, and the treatment of hemorrhage, is full and satisfactory.

The individual hemorrhages are treated of with equal ability. The article on hæmoptysis is a particularly excellent one; that on hæmatemesis also presents a very complete exposition of the leading facts in relation to the pathology and treatment of this very frequent and important form of hemorrhage.

The fifth section embraces the diseases of the organs of secretion; those of the secretory functions of the serous and cellular tissues being the first treated of, under the general denomination of dropsy. The pathological conditions upon which the serous accumulation in dropsy depend, and which, in fact, constitutes the true diseases, are set down as the following:—

1. Irritation, active congestion, or inflammation. 2. Debility or relaxation of the serous tissues. 3. Passive congestion. 4. An altered condition of the blood; and 5. Deficient absorption. The author's remarks under each of these heads are particularly sound. We are happy to find he admits the entire want of evidence that dropsy is ever dependent upon deficient absorption.

"It is highly probable," he remarks, "that a deficiency of absorption in consequence of congestion of the veins, is one of the pathological conditions upon which dropsical accumulations depend; but it is equally probable that this is never the sole nor even the original cause, for in all such cases effusion is greatly increased in consequence of the distended state of the vessels. The fact of the enlargement of the lymphatics in such cases goes to show that absorption is not diminished in the ratio of the increased effusion, a portion of the duty of the veins being performed by the absorbents, which thus labour, though not in all instances, effectually, to remedy the inconvenience arising from the venous congestion."

A full and accurate exposition is given of the causes which produce the several pathological conditions upon which the effusion depends; as also of those forms of dropsy which follow scarlet fever, or are dependent on cardiac, hepatic and renal disease.

An excellent account follows of the treatment of dropsy generally; in which is embraced the experience of the best modern writers on the disease.

The individual dropsies are next considered; under this head Dr. W. presents a short notice of what has been termed chronic hydrocephalus, which is unquestionably a true dropsy of the brain; upon what, however, the effusion depends when the disease occurs subsequent to birth, it is difficult to determine; the congenital cases are almost always connected with some organic defect in the encephalon.

The diseases of the skin form the subject of the second subsection. The author follows chiefly the classification and nomenclature of Willan and Bateman, without neglecting, however, the reform in the nomenclature proposed by subsequent writers. All that need be said in regard to this portion of the work, is that the author's descriptions of the several cutaneous affections are accurate, and the treatment such as is sanctioned by general experience. The whole subject of diseases of the skin is one but too little studied in this country, and in the treatment of which there is unquestionably far more of empiricism practised than perhaps in almost any other class of diseases. Happily many of the worst and most intractable forms of cutaneous disease are rare in the United States.

The subsection on diseases of the salivary glands and pancreas is short and of little interest. It comprises salivation, deficient secretion of saliva and alteration of the saliva, inflammation of the salivary glands, mumps, inflammation of the pancreas, and the non-inflammatory organic affections of the latter organ.

The subjects of the next subsection, diseases of the liver and its appendages, are far more important. Hepatitis receives all the attention its frequency and serious character demand. Dr. W.'s exposition of its pathology and treatment will be found full and satisfactory. A very excellent account is also given of jaundice. Among the pathological conditions giving rise to this affection Dr. W. enumerates one not generally recognized by medical writers:—an accumulation of the colouring principle of the bile in the circulation, and its elimination by other emunctories than the liver, in consequence of the secretory action of the liver being either suspended or diminished in a degree greater than the colouring principle is produced.

This view of the cause of jaundice was advanced some years since by the author in a paper published in the *N. A. Med. and Surg. Journal*, (October, 1826.) The facts upon which it is based would seem fully to support its correctness.

The diseases of the spleen follow next in order. They are chiefly inflammation, acute and chronic, congestion, softening, and hypertrophy and atrophy; of splenitis, in its acute and chronic forms, a very excellent account is given.

The succeeding subsection is devoted to the diseases of the urinary organs. The article on Bright's disease, which is one of the longest in the work, presents a very accurate exposition of everything known in relation to the several points connected with its pathology, and a short but correct account of its treatment. In fact, the whole of the diseases included in this subsection are treated of very fully, and with no little ability. The author's account of them embraces a concise digest of the numerous facts calculated to throw light upon their true character, diagnosis and treatment, for which we are indebted to the labours of modern and contemporary observers. It is, indeed, surprising with what accuracy and faithfulness the author has included in his histories of nearly all the affections which come within the scope of his work, a notice, often, it is true, a brief one, of recent facts and observations, both pathological and therapeutical.

The diseases of the nervous system are the subject of the sixth section, class III.

The histories given of the inflammatory affections of the encephalon are sufficiently full and accurate. It is true that no notice is taken of some of the occasional varieties, exhibited by those diseases, dependent, as it is supposed, upon the inflammation being confined to particular portions of the brains. To these attention has been lately directed by several writers. All of the varieties of encephalic inflammation that have been described within a short period past, have certainly not been made out with entire certainty, yet there is one or two which would seem to demand some notice in a systematic treatise upon the practice of medicine.

The correct pathology of what has been erroneously denominated acute hydrocephalus by medical writers, is given in the article on tuberculous meningitis. Dr. W. considers that the application of the term hydrocephalus to either of the cerebral phlegmasiæ should be abandoned and its employment limited to its strict etymological sense, as a synonyme of true dropsy in the brain—the chronic hydrocephalus of authors.

In the treatment of the first stage of tuberculous meningitis the author is in favour of energetic measures, at least to as great an extent as the strength of the patient will permit.

"Whatever danger," he remarks, "there may be, accrues, in nearly all instances, immediately from the inflammation; for even where tubercles are present, it is through this process that they almost always work out their fatal results, and where they are not yet formed, it is this which most strongly disposes to their deposition. It is inflammation, therefore, that is to be combated."

The same treatment is recommended, precisely, as in simple meningitis. It is all important, however, that it be resorted to early in the first stage, for it is only then that there can be some reason to hope that the tuberculous deposition may be prevented.

Dr. W. recommends, in addition to active depletion, cold applications and blisters to the scalp and an early mercurial impression, the employment of iodine. He would commence with it in such doses as the stomach of

the child could bear, and continue it throughout the treatment. The iodide of potassium or the compound solution of iodine (U. S. Ph.) should be employed. The iodide of mercury might, he thinks, with great propriety, be substituted for the calomel at the stage at which it is desirable to aim at the mercurial impression, and in this case the other preparations of iodine should be abandoned.

Of hypertrophy of the brain a very imperfect account is given, and quite an unsatisfactory one of tuberculous tumours of the brain. The facts that have been accumulated recently in relation to both these affections demand a more extended notice.

Upon the subject of apoplexy, there is a long and able article. Pressure upon the brain, from causes existing within the cranium, and of somewhat sudden occurrence, enters, according to Dr. Wood, essentially into the definition. The anatomical characters of the disease are very accurately, though briefly detailed—and the author's views of the pathology of the disease are those which the facts that have been developed in connection with it, would appear fully to sustain. His therapeutical directions are particularly judicious—without, however, being marked by any novelty in relation to the remedies employed, or the manner of their employment.

The article on what the author denominates the functional diseases of the brain will be read with no little interest, as the views expressed in it are somewhat opposed to those generally received. Among the pathological conditions of the functional disorders of the encephalon, Dr. Wood enumerates 1, pure nervous irritation, without any necessary participation of the blood-vessels—2, vascular irritation, or active congestion; 3, depression, whether nervous or vascular; 4, mechanical or passive congestion. Each of which conditions is separately considered. In regard to nervous irritation, he remarks,—

“The brain is peculiarly susceptible to irritation of an essentially nervous character, that is without necessary participation of the blood-vessels. Too exclusive an importance has, I think, been attached to the state of the circulation in this organ. All the morbid phenomena have been ascribed by some pathologists to too much or to too little blood, or to its unequal quality or distribution. These are undoubtedly frequent sources of cerebral disorder, but the brain is also frequently excited into disease without them. The nervous system has a peculiar mode of action of its own, in which, though blood may be necessary as an instrument, it is not the main operating principle. This action is susceptible of exaltation, depression, or depravation in itself, and from the influence of its own peculiar agents. The fact here stated is not of merely speculative interest. It is in the highest degree practically important, and a vast deal of mischief has been done by looking to the blood-vessels exclusively as the seat or source of cerebral disorder. But, in thus asserting for the nervous functions a capacity of exclusive and independent disease, we must not forget that their irritation frequently, in the end, involves the blood-vessels, and that the affections, if not relieved, may terminate, though not necessarily, in active congestion or inflammation.”

In the condition of depression, according to Dr. W., the activity of the brain is diminished either by a directly depressing influence, or by the withdrawal of an accustomed stimulus.

The morbid phenomena resulting from functional disease of the brain, the author treats of under the heads of 1, *sensorial disorder*, headache, stupor, and wakefulness; 2, *mental disorder*, ecstasy, somnambulism, mesmerism; 3, *motor disorder*, convulsions, and catalepsy.

Each of these phenomena is considered in reference to its symptoms, causes, and treatment more or less in detail, according to its greater or less importance.

While the views of the author in relation to the pathology of these affections are, in the main, highly plausible and always ingenious, they are often purely hypothetical and want the evidence of a sufficient series of facts for their support. His account, however, of the several states and phenomena enumerated are interesting and replete with judicious and very important suggestions.

The all important subject of insanity comes next under consideration. It is impossible to follow the author in his exposition of the pathology and treatment of the several forms of mental derangement. Having already extended our notice beyond the limits at first proposed, we must now hasten to conclude. Suffice it to say, that the views expressed by Dr. W. accord with those entertained by those physicians who, with the best opportunities, have studied with the most care the various diseased conditions of the mind. His article on insanity is, in fact, a very excellent outline of the present state of our knowledge upon the subject. It is well adapted for the instruction of the student. The author wastes no words in a comparison of opposing doctrines, and never enters into a laboured discussion of disputed questions, but selecting the facts and opinions which he considers well established, or at least, clothed with the greatest appearance of correctness, he proceeds to give a continuous and concise history of insanity, its forms and their characteristics, its causes, nature, and treatment, its pathological anatomy as far as it is known, and has presented within a small compass a very faithful picture of the disease, and a clear account of the most approved plan for its management.

To insanity follows an article on delirium tremens.

Dr. W. considers this affection to be a disorder of the cerebral functions, immediately dependent upon the diminution of the degree of excitation necessary for the support of the brain in its ordinary action.

"The brain," he remarks, "is in a state at once of debility and depression. It may be objected to this view, that there is increased muscular effort, amounting sometimes to violence; that instead of reposing, as in sleep, the brain is in perpetual action; in fine, that the phenomena are, in general, those of disturbance rather than depression of the animal functions. But we must recollect that the brain is not like other organs, and that its actions must be judged of by a different rule. One of its singularities is, that totally opposite conditions of the organ are attended with apparently similar effects."

In the treatment of delirium tremens, Dr. W. objects, on sound moral grounds, to the use of alcohol as the means for stimulating the brain "up to the point essential to its correct action." He believes that in opium we have a far safer, and in the majority of cases, an equally efficacious remedy; but in cases where the debility is so great, that the moderate use of opium alone is not sufficient to counteract it, the least stimulating, and most tonic and nutritious of the alcoholic liquids, may be allowed, in just such quantities as are necessary to sustain a due strength of pulse, it being suspended as soon as the stimulus ceases to be essential to this purpose.

With a very full account of epilepsy and chorea, the author concludes his consideration of the diseases of the brain.

His views of the nature of epilepsy are ingenious, but purely hypothetical.

"The disease," he remarks, "probably consists in a morbid excitability of the brain, and each paroxysm in a morbid excitement or irritation. A prominent effect of irritation, when beyond a certain point, is first to derange, and if it be still further

increased to abolish function. This law is applicable as well to the brain as to other organs. The irritation which occasions the paroxysm is sufficient to suspend all the cerebral functions connected with the mind, sensation, perception, intellectual action, emotion, consciousness, volition, but in relation to the motor function, is only sufficient to derange, not to abolish it. In this respect epilepsy differs from apoplexy. In the latter affection, not only are all the mental functions suspended, but to a great extent that of motion also. The difference may be owing to a less degree of the irritant or disturbing force in epilepsy, or to its more especial direction to the cortical substance, whereby the mental functions, which are probably connected with the latter, may suffer most, while the motor functions, connected essentially with the medullary substance, being as it were in the outskirts of the irritant influence, feels only enough of it to be excited into a morbid increase of action, and not enough to be overwhelmed entirely."

The diseases of the spinal marrow come next under consideration. A very good account is given of spinal meningitis, cerebro-spinal arachnitis, and myelitis. Tetanus is very fully treated of, and the same may be said of hydrophobia. Both these diseases Dr. W. supposes to depend upon irritation of the spinal marrow, and not necessarily to be connected with inflammation or other organic lesion of the cord. In regard to the treatment of the various spinal diseases the views of Dr. W. are in accordance with the experience of the best practitioners.

In hydrophobia he has little or no confidence in any of the numerous plans of treatment that have been proposed, and believes that the only certain means of saving the life of a patient who has been bitten by a rabid animal, is the early excision of the wounded portion and the free application of caustic subsequently.

In treating of the causes of neuralgia, Dr. W. remarks that, "neuralgia often originates in diseases of distant organs. In some instances, probably, an irritation may be transmitted directly from the diseased organ through nervous cords connecting it with the painful part; but most frequently it is through the brain or other nervous centre that the communication is effected." Now we know of no *direct* nervous communication between any two organs, excepting that of the brain and spinal marrow, with the several parts of the body.

The work concludes with a very excellent account of the pathology and treatment of hysteria.

We have now finished a somewhat cursory review of the two volumes before us. Our favourable opinion of the manner in which the author has accomplished his task, will have been perceived from the remarks already made in reference to the several portions of the treatise. The work is one well adapted for the use of the student, to whom it will present a concise exposition of the present state of our knowledge in regard to the leading morbid affections to which the human body is liable, without embarrassing him with an array of opposing doctrines or loosely observed results. Dr. Wood has carefully selected the facts and deductions which he believes to be well established, and has arranged them in a condensed form calculated to convey correct and definite views of the subjects to which they refer. His descriptions of disease, though occasionally not so full, perhaps, as could be desired, are sufficiently accurate, while his pathological opinions are in general sound and his therapeutical directions cautious, plain, and in accordance with the results of general experience.

It may be objected to the work, and it is probable this objection will in some degree hold good, that while in one or two instances diseases of some importance are dismissed with a very brief account of their pathology and treatment, others of comparatively less importance are treated

of at considerable length, and that, in more than one instance, the author treats as diseases, morbid phenomena purely symptomatic or confessedly the mere results of diseases in one or other of the internal organs. Some of these defects are, no doubt, such as may be expected in a first edition, and will, we are persuaded, be remedied in the preparation of a second.

Were we called upon to present a general character of the work, we should pronounce it to be one marked by great accuracy, and plain but sound practical instruction, and as bearing evidence of much reflection, without any display of profundity of research or of mere professional learning.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XI.—*Medical Botany; or, Descriptions of the more important Plants used in Medicine, with their history, properties and mode of administration.* By R. EGLESFELD GRIFFITH, M. D., &c. &c. With upwards of three hundred illustrations. 1 vol. 8vo. pp. 704: Lea & Blanchard, 1847.

If credit can be claimed for American physicians, it well may be for their zeal in exploring the native sources of medicinal articles. At the time of the early settlement of our country, this seems to have been a prominent object with practitioners, originating partly from necessity and partly from a love for science, and a wish for its extension, fostered by the visitations of European naturalists. The desire to discover medicinal agents originated under circumstances to be found on record in the history of the colonies of North America. Their isolation, the difficult and infrequent intercourse with the rest of the world, the little wealth possessed to command exotic and expensive articles, together (in many instances) with a free and confiding association with aborigines, who had a knowledge, to a limited extent, of some native products, all conduced to direct attention to our Indigenous *Materia Medica*. In addition, a revolutionary struggle of long duration, after the difficulties alluded to were in a measure removed, threw physicians again upon their resources, to experiment anew, with the effect of confirming discoveries, and extending their knowledge.

What at first assumed the form of a crude, ill digested collection of facts, has gradually changed its character to that of an elaborate scientific exposition, and cherished be the memory of the enlightened and distinguished individuals, long since passed away, who kept alive the spirit of research in its infancy, and transmitted it to their successors. In a notice like the present, it is not permitted us to enter upon such minute details, as to give to each one the exact amount of credit due him for the good service performed in these endeavours to benefit the cause of science and humanity. By one in particular, however, a high degree of encomium is merited; the wreath he wore was not wrought of foreign bays, but of our own native plants; we allude to the late Prof. Barton, who contributed much by his own researches, and more still by infusing a spirit of investigation into numerous pupils, in advancing this department of medicine. Lest the results obtained by the cultivation of the Indigenous *Materia Medica* may not have been sufficiently considered, or their importance estimated correctly, we conceive that the presentation of a few facts in connection with the subject may be of service and perhaps interesting.

In the *primary list* of the U. S. Pharmacopœia, *one hundred and sixty-three* articles, derived from vegetables, are enumerated, of which 38 appertain to this country, 61 are found in Europe, 12 in South America, 1 only is peculiar to Mexico, 37 are produced in Asia, 10 are derived from the West Indies, and 4 from Africa. The proportion of native products is somewhat short of *one-fourth*, and if to these be added 46 which are common to this country and Europe, the resources within our borders amount to more than half of the list, and with some effort the remainder might be added. Again, if we take the products of South America and the West Indies in connexion, *two-thirds* of the whole catalogue will be found to appertain to the New World.

Of the same class of substances contained in the *secondary list*, *ninety-six* are enumerated, of which 69 are strictly North American, 22 European, 2 procured from Asia, 1 from the West Indies, and 2 from South America; 20 of the European are also common to the United States, so that only one-twenty-fourth can be regarded as exotics.

Now if we take the proportion of the two lists united, *two-fifths* are native pro-

ducts, and when to these are added the articles in common, four-fifths of the whole *Materia Medica* will be found to be obtainable within our boundaries. We have taken the catalogue of the *Pharmacopœia* as the basis of our estimate, because most convenient. It is limited, however, and had a new one been formed with more trouble than could be at present bestowed upon it, the proportion of indigenous plants would have been augmented. There are products employed with efficacy in every portion of the United States, known only within a local sphere, which might well have been added. If numbers, then, constitute an argument in favour of the importance of our native articles, they are sufficient.

But let us look into the character of these resources, and it will be found that they cover a large part of the ground laid out by therapeutists. Some of them are peculiar in their operation and unsurpassed, others again afford excellent substitutes for the imported medicines, if they are not even superior. The demonstration is clear that much has been accomplished in this department, and yet a vast field is open for exploration. With a country extending from the Atlantic to the Pacific, from the 49th parallel of north latitude to the torrid zone, who can predict the future advance of discovery?

Independently of the question with respect to what we may now, or hereafter, possess inherently, another arises as to how far exotic products of importance, not yet introduced, may be naturalized. If the possession of every variety of climate, elevation and soil can conduce to this end, never were greater advantages presented to any people. With increasing facilities for transportation, the productions of foreign climes, in the most favourable condition for vegetation, may to a greater extent be made our own, and thus in a measure relieve us of the burden under which we are now labouring, the importation of the most worthless trash in the form of drugs, followed by a drain upon our wealth, a temptation to cupidity, and an annual sacrifice of life.

We have commenced our notice of a work on medical botany with these reflections, because they are pertinent to the subject, and because its appearance is a harbinger of a renewed interest in it. It may be looked upon as a sign of the times—a promise of good hereafter. There are two classes of individuals who are desirous of information, the one constituted of mere tyros, the other of more advanced and to a certain extent practical botanists. The first searches for elementary details, for expositions of systems, and for technically descriptive accounts of plants, with their affinities and relations in a chemical and medicinal point of view; the second desires to extend his researches, to renew his recollections, and to obtain hints for his guidance, as well as to possess the means of speedy reference. Of elementary treatises there are an abundance, but few whose teachings are predicated on medicinal plants—none, indeed, in this country. The student must, therefore, devote himself to general botany, before he can attain to sufficient knowledge to understand medical. Amidst the pressure of studies, this method is not frequently pursued, and the time and opportunity are lost which might have been advantageously improved when studying *Materia Medica*. Again, the works containing specific accounts of medicinal plants, with notices of, or reference to the labours of those who have elucidated the subject by their researches and discoveries, in fact such as embody the whole learning of it, are either in the form of Medical Floras, of foreign origin, in several languages, or the ordinary dispensatories and treatises on the *Materia Medica*. The former must be imported, and the latter are not sufficiently comprehensive, as the botanical details have been written merely to complete the history of the articles contained in them. The American medical botanist has had heretofore no exclusive hand-book. To answer the purpose of both classes has the present work been elaborated. It has been written with a unity of purpose, the advancement of the department of science to which it is devoted, and fills a hiatus in our scientific literature. The divisions are such as are suited to elucidate the topics to be considered, and we shall examine them in succession.

The *Introduction* is devoted to the *Anatomy* of plants, including vegetable tissues, organs of nutrition, and organs of reproduction; to *Vegetable Physiology*, including the propagation of plants, their nutrition, and fecundation; to *Vegetable Chemistry*, to the *Classification* of plants, to *Pharmaceutic Botany*, and to the *Collection* and preservation of plants.

As in the study of the animal system, anatomy is the groundwork of our knowledge, so is it in the vegetable. Beginning with simple formative structure, an advance must be made to more complex. Minuteness of research in this particular is necessary to a comprehension of facts, which without it would be incomprehensible. A simple primary structure, runs through all the organs, whether of nutrition or reproduction, and all the forms they assume are so many shapes into which it can be moulded; but more than this, life is connected with it, and all vegetative vital phenomena, the laws of growth, change and decay, as well as the generation of peculiar principles by the assimilation and reactions of external agents, originate with it. Classification is inseparable from it, and frequently it is a guide to useful applications. A sufficient exposition of vegetable tissues has been given by the author, which, by the aid of the numerous well executed illustrations, must strongly impress the reader. The same may be said of his chapters on organs of *nutrition* and reproduction.

A question now arises, of what use is the information contained in such chapters to the physician or pharmacist, will it assist him in the prosecution of his vocation, or is it merely an introduction to some other knowledge having this end in view? The answer at once is, this very knowledge is at the foundation of all his studies. The medicines in which he deals are constituted of these very forms, both of nutrition and reproduction; his roots, barks, buds, stems, leaves, flowers, fruits and seeds are organic structures, endowed with properties of healing value. To become familiar with them entails a comprehension of their resemblances and differences, and he is most skilful whose minuteness of organic details is greatest. The physical and sensible properties which are relied on for discrimination are due to organization. A fibrous root may not be mistaken for a tuberculated one, but one that is tuberculated may be for another, as in the case of jalap and mechoacan. To the adept the structure would at once reveal the difference. What constitutes the value of some heart woods over sap woods, but structure? and in what resides the difference but the changes this structure has undergone? How are dried stems selected which, when plucked, were young, soft and pliant, as dulcamara, but from the appearance of their formation, dependent on the proportion of their structural elements? The forms and characters of the organs of plants employed in medicine are equally important with their structure. It is necessary that he who employs or deals in them should not be liable to error; substitutions and adulterations are too common not to render a knowledge of them essential. We would not desire a better argument than one derived from the blunders of those whose business it is to be better informed. Practical skill, from frequent inspection and handling, may do for a mere buyer and seller: but even he is betrayed into error, and an application for assistance to the scientific cultivator of his business is constantly occurring. To be ignorant of the distinguishing characteristics of medicinal articles, and what issues from a familiarity with them, an appreciation of their value for the purposes to which they are to be put, is as reprehensible, as ignorance, on the part of the mechanic and artificer, of the materials out of which he fabricates his wares and articles. We hope the day is not far distant when this opprobrium will be removed from medicine.

The chapter on Vegetable Physiology is a good exposition of what is known upon the propagation of plants, their germination, modes of nutrition, and fecundation. This is a beautiful theme, sufficiently interesting in itself, to attract the least inquiring, but it has its practical application. The modes of growth, the changes that occur, and transformations that take place, the modifying circumstances of time, season, soil, and it may be added cultivation, are all of importance, in as much as they influence the activity of drugs. Valerian is an instance of the changes from physical causes, and hyoscyamus from duration; there is, however, no dearth of examples. Intimately associated with the physiology of plants, is vegetable chemistry. The principles revealed by it, are those upon which all the substances employed are dependent for their efficacy; they are the nutritious or perturbatory agents in vegetable structure, varying at different times, and from a vast number of circumstances. To procure them in a perfect state is a desideratum. Fibrine, albumen, legumin, the alkaloids, starch, sugar, &c., all are to be studied as products of a vegetative process, over which chemistry presides.

In this respect, science in the hands of Liebig, Berzelius, Henry, Brandes, Pelletier, Caventou, and others, has made giant strides. The contents of these chapters should be completely mastered, as they afford a good introduction to more extended research.

We come now to Classification. This, as is known to every one, is the basis of systematic Botany. It may be called its expression, as from it are we enabled to give to particular plants an individuality. From species to genera, from genera to orders, and from orders to classes, a unity of plan is traced in nature, which without it would be chaos. With more or less success, have arrangements of plants been made, since they constituted the objects of inquiry. All, however, have given place to the two modes of classification now adopted, the *artificial* and *natural*; both have their advantage and defects, but for the purpose of the student of the *Materia Medica*, we conceive that the latter is preferable. The sketch which is given of the Linnæan system by our author is full. It may be consulted at a glance, and as it is founded on palpable organs in most cases, in searching to identify plants, is most acceptable to the student. The natural system is more complicated. Linnæus had a set of families, but it was more theoretical than founded in nature. Jussieu first worked out the problem, and gave an elaborate arrangement to the world, founded on the association of characters. This has since been modified by De Candolle and Lindley. The beauty of this mode is the entire separation of the divisions, by structural characteristics, which are not mutable, but which are found under all circumstances. Their manner of association also, is in accordance with a fixed order, so that when a certain set of them are present, we may look for all the others. Thus the union of vascular and cellular tissue is linked with the *production* of flowers and seeds; the cellular alone with spores; hence we have *Phænogamia* and *Cryptogamia*, and synonymous with them, are *Cotyledonous* and *Acotyledonous*. The first of these divisions is again separable into such as are formed by external growth, and such as have an internal deposit, each with a peculiar structural arrangement of the primary tissues, hence, the specification of *Exogens* and *Endogens*. The first of these is possessed of two seed lobes, and hence the synonym of *Dicotyledonous*, while the second having but one, are termed *Monocotyledonous*. Between these two Dr. Griffith has placed a division of plants with naked seeds, to which is given the title of *Gymnogens*, but as they have two cotyledons, and are exogenous in their growth, they may be regarded as belonging to the former. An exception exists in the case of what are termed *Sporogens*, which are anomalous.

Again, cellular tissue alone is connected with the existence of flowerless plants, or *Cryptogamia*, which have been divided into *Acrogens* and *Thalogens*.

In touching upon this classification we have but one object in view, and that is the interest it possesses in a pharmaceutical point of view, for in accordance with it, may products be arranged. The larger number of plants are *Dicotyledonous*, and from them are obtained as a consequence the valuable barks, woods, fruits, and more elaborate products; a smaller number are *Monocotyledonous*, and from them are fewer articles, mostly nutritious. The *Cryptogamia* includes but few medicines. Upon descending to the *orders* or *families* we may look for the alliances or affinities which constitute the value of what, by our author is termed "Pharmaceutic Botany." We cannot do better than quote what we have said in our notice of Royle's *Materia Medica* in the *Journ. of Pharmacy*, as it contains the whole gist of the matter. "The great reformer of Botany, Linnæus, made an effort to arrange the *Materia Medica* upon this plan (botanical affinities), and his essay was conclusive as to its feasibility. Similar ideas had been entertained, as for instance by Comerarius, but the knowledge was wanting for its successful development. The natural system of Jussieu presented an admirable opportunity of engrafting upon it the most natural classification of vegetable substances, employed in medicine, and of exhibiting, that similarity of products and virtue are so closely allied to structure and organization, as to be inseparable. The eminent expounder of this system, De Candolle, has fully accomplished the task, and if not the originator of the arrangement, most undoubtedly possesses the merit of carrying it out, with so much perspicuity and convincing detail, as to have established its superiority. His "*Essay on the Medical Properties of Plants*" is only one of many philosophic works, equally stamped with truth and reason, emanating from his

pen; and every pharmacist should be familiar with its principles. In this system, chemistry is the handmaid of botany, and advanced as the former branch has been since the year 1816, when the second edition of his essay was published, the light of experiment and research have only further confirmed his labours. This the author lived to see and to enjoy. Let us take one or two examples as illustrative of the statement that has been made. The *Solanæ* of Jussieu, or *Leuridæ* of Linnæus, presented a marked resemblance in botanical characters, so as to lead to their being grouped in a family; the family likeness being strong, the family traits were equally striking, each possessing deleterious properties. This was as far as De Candolle could trace the resemblance, but chemistry has exhibited that the bond is further cemented, by the discovery of an alkaloid principle in most of the articles, which discovery was fore-shadowed by Vauquelin, with respect to belladonna, when he stated that the deleterious principle of this plant is "a bitter and nauseous matter, soluble in spirits of wine, forming with tannin an insoluble combination, and furnishing ammonia from its decomposition by fire." We cannot enlarge upon this, to us, most attractive topic, illustrations can be borrowed from all the classes. But what can be said of the exceptions? Here and there an unruly member of a family occurs, which does not in disposition resemble the family, however much it does in appearance and habit. We are not disposed to disparage the system on this account, as exceptions must occur to every rule, and where they do occur, they serve, when fully understood, to render it more marked by their contrast.

The account of Medical Botany proper, that is, the descriptive portion of the work, is commenced by a general outline of the divisions, orders, &c. The orders have been arranged in groups, a novel feature in a medical work. They have been derived from Gray and Lindley, and modified by the author. Thus for example, Group I. is called *Polycarpiceales*. It includes *Ranunculaceæ*, *Magnoliaceæ*, and *Anonaceæ*. This arrangement is founded on the ovaries, and may answer a good end, certainly one of reference.

In the descriptive portion of his work, the author has given a succinct account of each species affording medicines which have been used; and a more or less complete description of the congeners which resemble it. It contains a greater number of descriptions than any book we are familiar with, together with information not usually found in print, or else diffused through an immense amount of reading, which has been laid up in the storehouse of his memory, and here poured forth for the edification of the reader. An account of the mode of operation, uses, and modes of exhibition is appended to the several articles. We cannot conclude this notice without expressing our opinion that this work is an exceedingly valuable contribution to the department of medicine of which it treats, and since a movement has been made, on the part of the recent Medical Convention, to awaken the attention of physicians to the value and extent of the Indigenous *Materia Medica*, must do good service in promoting this object. It should be "read, marked, learned, and inwardly digested," by every student, that the reproach may be put aside, that the science of botany, which has done so much to furnish the materials for success in the practice of medicine, is neglected as a useless part of professional education. J. C.

ART. XII.—*On the Pathology and Treatment of Scrofula; being the Fothergillian Prize Essay for 1846.* By ROBERT MORTIMER GLOVER, M. D., Corresponding Member of the Medical Society of London, Lecturer on *Materia Medica* in the Newcastle Medical School. "*Hypotheses non fingo*"—*Newtoni Principia*. London, 1846: 8vo. pp. 315, with four plates.

This is a work of very considerable research. There are few of the more prominent authorities in relation to the disease of which it treats whose observations and opinions are not referred to, and often quoted at great length. Indeed, the frequency with which the author indulges in quotation, and the numerous references with which his essay is loaded, render it a somewhat tiresome one to read. Though we view it as a very valuable contribution, calculated to improve very materially

our acquaintance with the general pathology of scrofula, we cannot concede to Dr. Glover much credit for the manner in which he has arranged his materials, or the care with which he has collated and digested them. In relation to almost every point calculated to throw light upon the true character of scrofula, the work before us is far more full and satisfactory than the contemporaneous one of Dr. Phillips on the same subject (*see our number for July, 1846, p. 149*); while on all that relates to the etiology of the disease it falls far below it in the positiveness and fullness of its information. This is the more to be regretted, inasmuch as we feel confident that, with all his accuracy and research, Dr. Phillips has been led into more than one error by drawing a positive distinction between external scrofula and the tuberculous affections generally.

Dr. Glover adopts in its fullest extent the statement of Lugol, which makes scrofula, that is, the actual process of disease, to be always revealed by the development of tubercles; and hence he employs the term tubercle or tuberculous matter as including all scrofulous formations, in whatever organ or tissue of the body they may be seated. He distinguishes the scrofulous matter by its microscopic characters, its certain, not very definite chemical constitution, and its physical structure apparent to the eye, and which is well known; these characters, taken altogether, after the manner of the method of natural families in classifications of natural history, appear to him to be sufficient, as they can be described, to separate as accurately as can be done in any natural study, the scrofulous formations from all others. A number of authorities are adduced to show the identity of tuberculous matter in whatever organ or texture it is met with, and that all the forms of tubercle which occur in the different organs are produced chiefly by mechanical causes, and differ very slightly in a physiological sense, never in their more minute anatomy.

In regard to the vascularity or non-vascularity of tubercle and the degree of its organization, Dr. Glover adduces the facts recorded by various writers and the results of his own observations—and then remarks—

“These facts and observations, taken together, lead to the conclusion of the vascularity of tubercle being a non-essential phenomenon. The obliteration of the vessels of the tissue into which the scrofulous or tubercular matter is effused, may be carried to a greater or less extent; the inflammatory action produced by the presence of the tubercle on the surrounding tissues may, in some instances, cause obstruction of the vessels, or, in an earlier stage, increased vascularity; the envelopes which are formed around the tubercular mass may be more or less vascular, or totally devoid of vessels; but tubercle matter itself is *beyond the normal influence of the circulation*, and this fact is confirmed by the results of microscopic examination.”

The author enters next into an examination of the microscopic structure of tubercle and the chemical composition of scrofulous products.

The subject of the intimate structure of tubercular matter is intimately connected with the question of its organization. Most microscopic observers of late years, with some exceptions, having detected cells in tubercles, have concluded therefore that they are organized, inasmuch as it is to be inferred, in the present state of our knowledge, that the existence of nucleated cells is an essential element of organization. In opposition to this opinion of the organization of tubercular matter Dr. Glover adduces the conclusions of Canstatt, whose work he conceives to give perhaps the best representation of the present state of the question. The views, also, of the most distinguished writers on the subject of the intimate structure of tubercle are presented as introductory to the results of the author's own observations. These observations were made with powers of four hundred, and six hundred and ten diameters, and on tubercles from the lungs, heart, spleen, renal capsules, kidneys, and bladder, and on tuberculated mesenteric, bronchial, and cervical glands.

“The ordinary element of tubercle present in all the forms which we have examined,” Dr. G. states, “and scarcely different in one situation from what it is in another, is the granular corpuscle described by several writers. Many tubercular masses are composed almost entirely of this matter, which varies in size from about the bulk of a blood-globule to about, perhaps, the 1-10,000th of an inch in diameter. These corpuscles are generally of a somewhat yellowish colour, and when magnified by the highest power which we have used (610 diameters) show

occasionally spots in their substance which may possibly in some cases be nuclei. Mixed with these, which we believe to, be in some instances, altered cells, in other cases, new formations, we have the following elements:—

“1st. Epithelial scales, variously altered, observed in lung tubercle, which are shown in one of the drawings taken from a specimen of miliary tubercle.

“2d. Fat globules.

“3d. Crystals of salts, of which some specimens are exhibited in one of the figures of the microscopic drawings.

“4th. Portions of the destroyed tissues, which sometimes assume singular shapes.

“5th. Cells which also appear to belong to the old tissues; of these there is a specimen taken from tubercles of the heart in fig. 7, and fig. 12 of Scherer's plate probably represents similar cells.

“6th. Large granular and corpuscular masses of the most irregular forms.

“The corpuscular granules which constitute the essential elements are shown in fig. 5, magnified 400 diameters, and again in fig. 6, magnified 610 diameters, and still larger than they appear under the microscope, so as to elucidate our view that, in some instances, these granules may arise from an error of nutrition, whereby nucleated cells become converted into thickened and semi-opaque bodies. Besides the various kinds of corpuscles, we find in tubercles a countless number of granules of very small size.

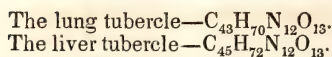
“In tubercles from various seats, then, we can discover no essential difference in constitution, and a marked discrepancy exists between cellular and fibrous growths arising from normal inflammation on the one hand, and tubercle; and again, between this formation and the various parasitic growths on the other hand.”

Dr. G. has not been able to discover any essential difference between the microscopic structure of infiltrated tubercle and that of ordinary tubercle already described. The structure of infiltrated tubercle consists of irregular corpuscles and granules, some epithelial scales mixed with a few exudation corpuscles, and a great number of minute molecules.

A very full account is given of the results of the chemical analysis of tubercular matter by Lombard, Hecht, Preuss, Güterboch, Scharlau, Simon, Schönlein, L'Héritier, Boudet, Scherer, and Wright, followed by the details of the several analyses performed by Dr. Glover himself; from which latter the following general conclusions are drawn:—

“1st. The results of the chemical analysis of tubercle, and its after products, of scrofulous bones, &c., although they may not as yet warrant very decisive conclusions, yet furnish some useful information, which will be found to bear upon the pathological propositions advanced concerning the essential nature of scrofulous and tubercular affections. Thus the large quantity of fat and extractive matters in tubercle, has a direct bearing upon the theory supported by many of the advocates of the use of cod-liver oil in the treatment of these diseases. The existence of pyin is important, and could we be sure of that of casein in quantity, we might, to a certain extent, explain the unorganizability of tubercles. But we have never been able to satisfy ourselves that the protein constituent of tubercle, as examined by us, approaches much nearer to casein than to albumen. Nevertheless, the researches of Preuss, Boudet, Scherer, and others, must be held decisive of the existence, at least in some cases, of casein; although the last named observer is far from confirming former writers in the statement of a large proportion of tubercle matter being composed of this substance. We have made other examinations for casein than those recorded, and have never been able to detect its presence. Whoever considers the very doubtful power of the tests which we possess, for distinguishing these different substances in the animal body, will be very doubtful of the precise nature of the protein basis of tubercle. Nevertheless, we may perhaps conclude that there is great probability of this protein compound having a certain approach to casein, or at least of a portion of it exhibiting a tendency to take on characters of this latter substance.

“2d. The ultimate analyses which have been made can lead to no very definite conclusion, although Scherer infers from a comparison of his formulas of lung and liver tubercle, that the difference which exists between them may arise from the substance in the latter situation being less exposed to the air. Thus he says, making the azote the fixed quantity, we have—



showing an excess of carbon and hydrogen.

"Our analyses would give to the protein compound of tubercle a much smaller per centage of azote in general than those of Scherer; only 12.31 in the first analysis of mesenteric tubercle, while the proportions of carbon and hydrogen show that the substance had been completely freed from fat.

"3d. The analysis of the concretions which we have made, does not bear out in the least the statement of M. Boudet, which makes these bodies contain 70 per cent. of soluble salts. On the contrary, even in the tubercle, which may be supposed to form a transition stage on the way towards the conversion into the calcareous substance, we find only about one-third of the ash composed of soluble salts; and in the perfect concretion there was merely a fraction of these substances. In this respect our results agree with those of Scherer and Mulder. A doubt has arisen, whether these concretions should be regarded as the remains of absorbed tubercle, and this doubt is supported by Rayer, who maintains them to be oftener the residue of pus. The presence of these concretions may not improbably serve to attract towards them, once formed, mere osseous matter.

"4th. The analysis of scrofulous bones requires no comment.

"5th. Scrofulous pus appears to differ from ordinary pus, chiefly in the fluid part being thinner and mixed with albuminous granules proceeding from a decomposition of scrofulous or tuberculous matter. The pus globules appear also, as stated by Mr. Gulliver, to be fewer and less distinct than those of healthy pus. We have found them also more irregular in their form."

The state of the blood in scrofula is next inquired into. The statements of various writers on this point are given, and the results of the examination by the author of the blood in eighteen tuberculous patients, are presented in detail. The mean of the analysis made of the blood from six male patients, gave solids 208.05; fibrin 3.132; solids of serum 87.60; globules 117.32—rejecting a few decimals in the calculation. While the mean of the analysis made of the blood of twelve female patients, gave solids 203.845; fibrin 3.585; solids of serum 85.28; globules 114.88.

"On the whole, therefore," Dr. G. remarks, "it may be stated, as the result of these analyses, that in scrofula we have an increase in the solids of the serum, and a diminution of blood globules, which is very nearly the alteration that has been long suspected to exist. As far as the analyses go, the fats are not deficient in the blood, and however opposed this may be to certain hypothetical notions with regard to the supposed *modus operandi* of cod-liver oil, it is altogether in harmony with the results of the analyses of tubercle which we have made."

In regard to the changes in the bile, lymph, and chyle in scrofula, Dr. G. notices the idea of the disease being connected with deficient secretion of bile; the chylous digestion being supposed defective from the absence of the fatty principles of the bile; in support of which we have the fact of the frequent occurrence of fatty liver in persons who die of scrofulous disease. Le Pelletier observes, that in the autopsy of scrofulous persons he almost invariably found the bile more pale and less consistent, and less charged with resin and colouring matter, than in the ordinary state. This fact was also observed by Bordeu, and Dr. G. has also made the same observation, but was withheld from drawing any inference, inasmuch as in the state of marasmus which exists in the subjects referred to, where every secretion is in a deranged state, it affords no evidence as to the share which a deranged state of the bile may have in the production of scrofula.

"Moreover," Dr. G. adds, "the fatty state of the liver is not constant in tuberculosis, nor does, as Rayer remarks, a fatty state of the liver always produce this disease in animals, while in man, this fact is also notorious. Nevertheless, although we cannot recognize a merely deficient secretion of the fatty principles of the bile as the cause of scrofula, it is not very improbable that these states of the liver and bile are closely connected with the pathology of the disease. The fatty state of the liver being only occasionally found in scrofula, and having been particularly observed in tuberculosis of the lung (for Le Pelletier and Bordeu, in their accounts of autopsies of scrofulous persons, do not speak of a fatty state of the liver, but of a watery condition of the bile), may arise from obstructed respiration,

which, even where the physical obstruction to the passage of air into the lung is not considerable, may yet result from the deficiency of blood globules, which analysis shows to exist alike in internal and in external tuberculosis; the blood-globules being the portion through which the aëration of the blood is effected."

Dr. G. believes that, notwithstanding the attempts that have been made to show an alteration in the nature of the chyle and lymph in scrofula, these alterations are entirely unknown to us. In some cases of tubercle, a tuberculous matter has been found in the lymphatics (Andral); Dr. Bulman has also noticed the same thing in a case of mesenteric disease. The notion of a peculiar acidity of the lymph, entertained by Baumes, Hufeland and others, is, of course, purely hypothetical.

Great stress has been laid upon the state of the stomachic secretions in scrofula, especially by the German writers. An excessive formation of acid is the principal derangement, and to the depraved digestion produced by this excess of acidity, a prominent part in the pathology of scrofula has been ascribed.

The analyses of Dr. G. do not show any particular affection of the urine in scrofula, unless where there is a long continued exhaustion.

All authorities and observations alike concur in indicating a deranged state of the functions of the skin as a constant concomitant of scrofula. The skin is generally hard and dry, but occasionally there is profuse sweating.

Dr. G. treats next of the scrofulous diathesis. Upon this subject his remarks present nothing particularly novel or interesting.

The ensuing chapter presents a sketch of the comparative pathology of scrofula. From this some useful inferences may be drawn in regard to the etiology of the disease in man. A more interesting inquiry is that which forms the subject of the following chapter—the identity, namely, of scrofulous and tubercular diseases. As we consider this to be one of the most important points connected with the pathology of the disease, we shall quote somewhat extensively from the general conclusions of Dr. Glover based upon the several facts and opinions advanced in relation to it.

"Many of the objections to the identity of scrofula and tubercle may be summed up as follows:—

1st. The difference of form between scrofulous formations and tubercle, the former being indeterminate and indistinctive, the latter more or less rounded, and provided with an envelope. But all this merely depends upon the structure of the tissue in which the deposit occurs. In some of the illustrations of diseased lymphatic glands appended, we have in the interior of the glands, cysts filled with scrofulous or tubercular matter, comparable to isolated tubercles.

"2d. It has been asserted, that while scrofulous glands can be injected, tubercles show no vessels in their structure. But, besides that some, as has already been shown, have distrusted the latter observation, it appears clear, that neither scrofulous matter nor tubercle is *essentially* vascular. 'All these assertions,' says Canstatt, 'are groundless; vessels are wanting to all tubercles, except what remain of the tissue in which the deposit has taken place.'

"3d. The same author observes, that tubercles may heal, as well as all the forms ascribed to scrofula, that both are curable in the same manner, and that scrofulous masses, like tubercle, are subject to pass into chalky masses and degenerate. The resemblance between the representation which we have given of a cicatrix in the lung, formed by the healing of a tuberculous abscess, (as was proved by the remains of tubercular matter imbedded in the false membrane of the cicatrix, as demonstrated by the microscope,) and the appearance of a scrofulous scar of an external part, is particularly striking.

"4th. It has been said that tubercular masses soften more easily than scrofulous tumours, but the greater sluggishness of the latter depends simply upon the slighter susceptibility of the tissue in which they are situated to irritation, while the pulmonary substance is especially liable to undergo inflammation.

"5th. Again, we have it advanced, that persons below puberty are more liable to scrofula, those of a more advanced age to phthisis, and, that those who may have the latter disease later in life, have in their youth rarely suffered from the former. (*Scharlau.*) But we have scrofula at all ages, and pulmonary tubercles have been found in the fœtus, while a very large proportion of the deaths from phthisis, occurs below the age of puberty; but all this could only show, how at

one period of life the morbid deposit was directed toward the external, at another upon the internal parts,—or, with regard to the latter part of the argument, it might be inferred, of people in the circumstances described, that at an early period 'no occasional causes existed, by which the possibly inherited scrofulous diathesis might be brought to a further development; the childhood and boyhood passed happily over without the symptoms appearing, but at a later period, when the determination of blood to the lungs gives liability to pulmonary affections, pulmonary consumption appeared.' (*Bredow*.)

"6th. The assertion made by Scharlau, of the lymph and chyle glands being mostly sound in tuberculous affections, while in scrofula they are the chief seats of the evil, is in total contradiction to well known results. Indeed, one of the most powerful arguments in favour of the identity of scrofulous and tubercular affections, is the association of tuberculous glandular disease with phthisis, for surely, no one can contend for a distinction between those pathological conditions which respectively give rise to tubercularization of the cervical, bronchial, and mesenteric glands. According to Barthez and Rilliet, the scrofulous affection of the gland is always a tubercularization: 'but it will be said, all scrofulous patients do not present tubercles, and we see children succumb with caries, without the bones containing this accidental product, with the ganglions enlarged and not tuberculous. For our part, after having opened the corpses of a great number of scrofulous subjects at the hospital of St. Louis, and at the Children's hospital, we may affirm, that we never missed finding the tuberculous deposit.'

"Every one is acquainted with the well known law of Louis, that, above the age of puberty, tubercles never exist in any organ, without, at the same time, occurring in the lungs. Admitting a few exceptions to this law, still it must be admitted to be very nearly correct. Below the age of puberty, indeed, the lungs are more frequently exempt. Thus, out of 312 children who died of various tubercular affections, the lungs were in 47 exempt from tubercles. According to Lugol, scrofulous children have always tubercles of the lung. 'The natural death,' he says, 'of scrofulous patients, takes place by the chest; one may even assert that it does not take place otherwise.' This assertion is one of the grand generalities in which M. Lugol so frequently indulges; nevertheless, we may extract from it a certain value.

"Louis, after relating a remarkable case of tubercularization of several organs at once, says, 'The development of tubercles in the brain and cerebellum, is doubtless a less striking feature in this case, than the simultaneous existence of these bodies in a great number of various parts, the lungs, the neck, the right axilla, the mesenteric glands, the spleen, and more especially, the fact of the tuberculous matter being in the same stage of development in all these places except the lungs. I really do not understand how this fact can be accounted for, unless by admitting the agency of one and the same cause, acting at one and the same time upon all these parts.—And, above all, what explanation can be advanced of the circumstance, that the tuberculous matter was in the same stage, that of crudity, in every place where it existed, if the cause leading to its evolution be not admitted to be uniform, and to have produced its effects simultaneously.'

"7th. Scharlau, whose objections have been so often referred to, has also contended for another distinction: Scrofulous diseases, according to him, are found in the venous and lymphatic temperaments; while phthisis is an affection of sanguine people. There is more in this objection than in those previously considered, although it does not amount to much, for we find scrofula in all temperaments, and likewise phthisis. But, admitting a lymphatic temperament to be more necessary to the production of scrofula than phthisis, the explanation is to be found in the fact of the lungs having, of all organs, the greatest tendency to tubercularization, although this tendency may be obviated, to a certain extent, by other circumstances, as in the period of life below puberty; so that we may have a less amount of the lymphatic temperament requisite as a predisposing cause in phthisis than in scrofula.

"8th. A different state of the secretions and excretions has been assumed to exist in the two diseased states under consideration. Thus, while the urine of those affected with scrofula contains urobenzoic and oxalic acids, in phthisical patients the same fluid contains an excess of uric acid. This, of course, is all hypothetical. The formation of an acid in the stomach in scrofula has been laid

down as a distinction; but children are more disposed to acidity than grown persons.

"9th. Schönlein says, 'The family of tubercular diseases is united with that of scrofula, but by no means the same, as later writers assert.' His chief ground for making a separation, appears to be the notion of tubercles partaking of a parasitic nature. But this opinion is, as shall be afterwards shown, totally without foundation.

"10th. Dr. Evans argues for the complete separation of the strumous and tubercular diatheses, chiefly from the circumstance, that he sees every day, numerous examples of phlyctenulæ, ophthalmia, prurigo, rickets, &c., and frequent cases of lymphatic looking children with tumid upper lids, dilated pupils, swollen bellies, and enlarged cervical glands, in whose parents and other relations, he could not find that consumption or decline occurred more frequently than among any other class of persons. He has known many large families, the members of which have been all more or less subject to scrofula in one form or another, and none of them had ever suffered from phthisis. 2dly. That upon inquiry into the early history of numerous phthisical patients, he has remarkably seldom met with persons who at any time presented the characteristics of struma. In one remarkable instance, where, out of a family of eighteen members, fourteen died of phthisis, not one ever presented symptoms of scrofula, unless acute hydrocephalus in one child could be considered such. To the first of Dr. Evans' arguments the author replies, that he should doubt whether any one of the affections enumerated is peculiar to scrofulous children. Certain affections may approach more or less near to the strumous type; but they cannot be used in a question like this, about the degree of connection between true scrofula and phthisis. To the other arguments, Dr. Glover replies, 1st, Families may be hereditarily liable to one or more forms of scrofula; thus, not to multiply examples, he has had recently under his care a child, who, at the age of sixteen months, was attacked with symptoms of *tabes mesenterica*: at the same time of life, or within a week or two of it, three brothers had been formerly affected in the same way, and subsequently, the disease had proved fatal to all of them. He likewise admits a less amount of the constitutional predisposition requisite for the production of phthisis than of ordinary scrofula. 2dly. The observations of Dr. Evans are contradicted by those of numerous authorities. Lugol is particularly mentioned.

"Moreover," continues Dr. G., "it is so exceedingly difficult to trace the history of disease in families, and patients are so unwilling to admit the existence of either phthisis or scrofula in their ancestors or relations, that little dependence can be placed upon inquiries of this kind. Among the cases of scrofula which we have observed under our own care, and that of our colleague Mr. Potter, during the last two years, we have been able to trace the family history with some certainty in eighty cases; a connection between scrofula and phthisis could be observed, either in the same individuals or in members of the same family, in thirty-eight of these cases. But so many persons die of phthisis, that very extensive inquiries indeed, made with precautions which are very difficult to practice, would be requisite, in order to enable us to arrive at a result worthy of confidence in this way. We rest our opinion of the identity of scrofula and phthisis, on the perfect identity of the greater number of anatomical and pathological details common to these affections.

"The occurrence of scrofula in the glands of the neck, or generally in an external form, may also prevent the existence of the internal disease becoming manifest, according to the popular belief, and according, also, to the opinion of Sydenham."

In regard to the arguments of Mr. Phillips, in his recent work on scrofula, to prove the non-identity of scrofula and phthisis, Dr. G. remarks:—

"Most of his arguments are of the same nature as those already referred to and answered. He lays great stress upon the different periods of life in which deaths occur from phthisis and scrofula. We have already shown that this argument is of no weight in the sense in which it is attempted to use it. Besides, the number of deaths from scrofula in the Registrar-General's report, to which Mr. P. trusts, is no evidence of the extent to which the disease prevails. Mr. P., while noticing this objection, remarks, strangely enough, that a similar objection might be made

to the inference from the number of deaths from phthisis. But the deaths from phthisis, unfortunately, are good evidence of the extent to which the disease prevails. Another of Mr. P.'s arguments is derived from the fact, that according to the same report, phthisis destroys an excess of females, scrofula an excess of males. There is evidence to prove that, in some situations and countries at least, scrofulous affections are common and phthisis rare; upon this, also, Mr. P. lays great stress. The conclusion at which an inquirer may arrive upon the question just discussed, must depend upon the view he takes of the relative importance of the arguments and facts brought forward on the different sides. We consider that on the one side all is clear, *pathological*, and decided, founded on facts of essential relation; while on the other side we have doubtful assumptions, and, at best, non-essential relations."

We need offer no apology for the length of the foregoing extracts; the question discussed is one of equal interest and importance.

Dr. Glover next enters upon a consideration of the essential nature of scrofula. His brief commentary upon the different hypotheses advanced upon this point, is sound and pertinent. His own opinion of the disease is, that it is "a peculiar modification of inflammation"—in which, instead of the ordinary, or, as they may be termed, the normal products of inflammatory action, other materials are produced incapable of passing into the regular cell form—which materials constitute the tuberculous or scrofulous matter. This opinion is supported by a series of arguments, which, if not absolutely conclusive, are, at least, ingenious and plausible. We have not space to attempt an exposition of them.

On the etiology of scrofula, Dr. Glover has thrown but little additional light. Its hereditary nature he considers to be placed beyond the possibility of doubt—or, at least, of that peculiar condition of the organization, which predisposes to its occurrence when exposed to any of its exciting causes. The evidence in support of the opinion which places bad air and defective ventilation among the chief of the occasional causes of scrofula, is not supported by the results of statistics; "nevertheless," Dr. G. remarks, "as there is reason to believe the blood globules to be mainly concerned in the function of respiration, it is not improbable that the want of due arterialization of the blood by a sufficiently oxygenated air, may be essentially connected with the state of the blood which exists in this disease. Could we establish such a connection, more confidence might be entertained in the theory of Baudelocque, than can be given by the statistical results hitherto published." The influence of confinement, Dr. G. would appear to believe established. The influence of humidity, he admits, the researches of Mr. Phillips have shown to be much overrated. Too much vegetable food has been enumerated as an occasional cause of the disease. The facts adduced by Mr. Phillips are conclusive as to the correctness of this position. Great stress has been laid upon the power of venereal errors, to produce scrofula.—Lugol considers onanism rather as a sign of the presence of the disease. We have no positive evidence to support either opinion.

"The diseases which have been supposed to occasion scrofula or tubercle, are chiefly inflammatory affections, common continued fevers, hooping-cough, measles, syphilis, scarlet fever, variola, and vaccination. Barthez and Rilliet have collected the best evidence on these points. The question of the connection between inflammatory affections and tubercles, has been discussed in the sixth chapter. (On the essential nature of Scrofula). According to Barthez and Rilliet, to whose work we must refer for information on the whole of this subject, variola, instead of predisposing to tubercle or scrofula, as had been conjectured, appears to prevent, while vaccination favours the development of this disease. Of 34 children who had variola or varicella, (a long time before their death,) and who had been perfectly cured of these affections, 19 died tuberculous, and 15 non-tuberculous. Of 209 children who died without having had small-pox, or in whom it was terminal and quickly fatal, 127 had tubercles, and 82 had them not. Of 208 children who had been vaccinated, 138 died tuberculous, and 70 non-tuberculous. Of 95 who had not been vaccinated, 30 were tuberculous, and 65 not so.

"6th. Variola, scarlatina, and typhoid fever, according to the observers just quoted, have a tendency to dispose tubercles to pass into the cretaceous state.

"Intermittent fever is believed by many to be opposed to the development of tubercle or scrofula; and the countries in which intermittents prevail, are asserted to be peculiarly free from tuberculous diseases; but this is doubted by others. At the recent meeting of the Italian Scientific Congress, very different opinions were avowed on the question of the antagonism of ague and tubercle; and M. Lefèvre, of Rochefort, has recently written to the Academy of Medicine to state that, in that town, where intermittents prevail, phthisis, also, is very common.

"Almost all authors, with the exception of Dr. Boyd, seem to consider that tuberculous affections are more common in women than in men. Out of 128 cases of scrofula (external tuberculosis) admitted into the new dispensary under our care, and that of our colleague Mr. Potter, from February, 1844, to February, 1846, 62 were males, and 66 females; 80 of the whole were below sixteen, and 48 above that age. One of the patients, affected with scrofula of the axillary glands, was a female, aged sixty.

"The researches which have been made on the frequency of tuberculosis at different ages, relate, almost entirely, to the internal forms of the disease. So far as scrofula is concerned, we know that it may occur at any age, and from our own experience, should be inclined to doubt, whether its frequency at different periods of life may be so different as is thought, from the relation to the number of people of different ages. It seems, however, to be sufficiently established, that those affections which are generally regarded as the signs of the scrofulous diathesis, make their appearance more commonly in early age. It is probable that the occasional causes will act more powerfully upon young persons.

"It has been considered that the spring is the season of the year at which scrofula is most apt to break out; and when scrofulous sores undergo a kind of exacerbation.

"The geographical distribution of scrofula is an interesting subject, but the data which we have, furnish us with most imperfect information; only with regard to the internal forms of tubercular diseases, is there anything like exactitude.

"NOTE, from Canstatt.—On the frequency of tuberculosis in different countries.—We chiefly follow Andral in this matter. From the 60th degree of north latitude to the 50th, tuberculosis is very scarce; for in 1,000 cases of death, there are only 53 of consumption; (this appears erroneous, for scrofula is more frequent in Russia than in England; the disease in Russia affecting more the outward parts and bones; the same in Scotland, and in Iceland;) from the 50th to the 45th, the disease is more frequent. So in Vienna, of 1,000 deaths, 114 arise from consumption; in Munich, 107; in Berlin, 71; in London, 246. In Paris, the proportion is a 5th; in Marseilles, a 4th; in Philadelphia, an 8th; in Nizza, a 7th; in Genoa, a 6th; in Naples, an 8th; in Milan and Rome, a 20th; the disease is also frequent in the North American States, particularly in Boston. Consumption is said not to be scarce in Spain, Portugal, Madrid, Gibraltar, Lisbon, Azores, Malta, Greece; in the Mediterranean and Indian Archipelagos, Mauritius, and East Indies; in the West Indies, where it particularly rages among the Negroes; and on the *Western Coast of Africa*. This disease is more scarce, according to report, upon the *Northern Coast of Africa*, and in *Egypt*; in Persia; in the interior parts of North America; on the shores of the Ohio, Mississippi, and Missouri, (according to Clark;) also at the Cape of Good Hope. Does the approach to the sea exercise a beneficial or an injurious influence? For both sides authorities may be quoted, and contradictory opinions supported by matters of fact. Aboard ships, and among sailors, the disease is scarce. Nothing favours the rise of tuberculosis more than transportation from a warm to a colder climate."

Dr. Glover's exposition of the general principles of treatment in scrofula, commences with some remarks upon the importance of such hygienic and medicinal means, as shall tend to strengthen the organism, as well for the purpose of prevention as of cure. In regard to his opinion of the curative powers of the several remedies, we can only afford room for a brief statement of the general conclusions to which he has arrived from the results of his observations.

Of *Digitalis*, Dr. G. remarks:

"When we consider the powerful diuretic effects which foxglove can exert, we may easily understand how it comes to be useful in scrofulous affections; but this

property is combined with so many inconveniences, as to account fully for the abandonment of this remedy, and the use of safer means which are also more efficacious."

Of *Walnut leaves*, after noticing M. Negrier's statement in regard to their curative powers, Dr. G. concludes thus:

"On a careful consideration of the evidence which he adduces in support of the virtues of the remedy, we are disposed to regard these as of a very doubtful character. The treatment was, in many of the cases, of such long duration, and the *apparent* physiological operation of the remedy so obscure, that we cannot believe it a substance of any great power. It is probably beneficial internally as a tonic, and as an astringent, when applied externally—there appears, at least, to be little doubt of the success of this remedy in the cases of scrofulous ophthalmia."

Speaking of the *Vegetable tonics*, he says—

"It is chiefly in the intervals of the *iodine treatment*, or in a case of marked debility, that we should recommend the use of these substances. We sometimes prescribe an 8 oz. mixture, containing an ounce of the concentrated infusion of gentian, with 70 or 80 minims of diluted sulphuric acid; a tablespoonful to be taken thrice a day. The combination of *Columba* in powder, with the saccharine carb. of iron, in particular, has appeared to be useful as a general tonic."

The utility of *Bromine* as an external application, in scrofula, the experience of Dr. Glover, and of his colleague Mr. Potter, have fully convinced them. It forms an easily prepared, elegant, and cleanly lotion; 8 or 12 minims of bromine being used to a pint, half a pint, or 8 oz. of water.

He always gives iodine in the form of the compound tincture of the London College, or a simple solution of hydriodate of potass. He commences with adults, by giving 25 drops of the compound tincture, thrice a day, which he augments gradually to 30 or 40 drops, if the patient can bear it; but, in general, when the dose becomes 35 drops, nausea, pains in the stomach, and sometimes vomiting and purging are occasioned, in which case the dose is immediately reduced. When the patient can bear a good dose without the remedy disagreeing with him, in the way of its primary action, he does not find any inconvenience from its secondary symptoms; but he does not give iodine in a very cachectic habit, preferring, in such cases, the use of iodide of potassium alone, or the syrup of the iodide of iron, or cod-liver oil.

"The compound tincture of iodine, given in this way," he remarks, "improves the appetite, acts as a general tonic, and increases powerfully the quantity of urine, and also, according to our experiments, the amount of solids, and of urea."

In particular cases of gastric irritation, connected with acidity, Dr. Glover believes the *alkaline carbonates* will be found especially beneficial; he has repeatedly combined them with bitters, with good effect.

The *chloride of potassium*, Dr. G. conceives, might be given now with advantage, when the iodide is so dear. The *bromide of potassium* he considers more powerful than the chloride, less active than the iodide. Not being so apt to occasion nausea as the latter substance, it may be used in cases where this might disagree.

Dr. G. supposes the *chloride of sodium* to possess nearly the same properties as the iodide of potassium; but its action is much weaker.

In very cachectic persons, the result of Dr. G.'s observation would lead him to prefer the *syrup of the iodide of iron* to any other compound of iodine; but the properties which it possesses are rather those of the base, than of the electro-negative element. All the preparations of iron act powerfully as stimulants of the intestinal canal, and probably upon the uterus. The syrup of the iodide seems indicated especially, when in scrofula menstruation is defective. In such cases he sometimes combines the sulphate with aloes. The *bromide*, apparently, according to his results, may be used instead of the iodide.

The author suggests the conjunction of *sea bathing* and *mineral waters*, with the other means of a hygienic character, likely to prove beneficial in scrofula, whenever the circumstances of the patient will admit of it—with these the proper medicinal treatment may of course be combined.

In regard to *cod-liver oil*, Dr. G. states that he should certainly be inclined to recommend its use in cachectic cases of scrofula, both because he has seen its good

effects, and also, because its use is now a fair subject for experiment, for which the treatment of the disease frequently furnishes a legitimate field.

He, in conclusion, suggests a trial of the effects of galvanism in scrofula. In the work of Labeaume, translated into the French by Fabré Palaprat, are several instances in which the application of galvanism to scrofulous tumours seems to have been attended with the result of either hastening their suppuration, or producing absorption.

The appendix contains twenty-three cases of external tuberculosis or scrofula, given in detail with the treatment pursued, in order to elucidate the author's views of the treatment of the disease.

The whole work is a highly interesting one—presenting a very large amount of valuable facts in elucidation of the pathology of the disease, and some useful hints in relation to its treatment. The time and labour occupied in its attentive perusal, will be well repaid by the information to be derived from it.

D. F. C.

ART. XIII.—*Illustrations of Medical Botany; consisting of coloured figures of the plants affording the important articles of the Materia Medica, and descriptive letterpress.* By JOSEPH CARSON, M.D., Professor of Materia Medica, in the Philadelphia College of Pharmacy; Member of the American Philosophical Society, of the Academy of Natural Sciences of Philadelphia; Fellow of the College of Physicians, &c. The Drawings on stone, by J. W. Colen. Philadelphia, Loyd P. Smith, 1847, No. 1, pl. xx. 44.

THIS beautiful work is admirably calculated to fulfil the intentions of the author; that of presenting faithful representations of the more important medicinal plants, with such accompanying text as is required to explain their scientific relations and remedial properties. In the execution of this, Dr. Carson has not only availed himself to the fullest extent of the labours of others, but has employed the ample materials at his command in the correction of errors, and in the diffusion of new and important information. The only objection we make to the work is, that he has not gone at greater length into the botanical and medical history of the various objects treated upon, as there is no one more capable of elucidating the subject, and of definitively settling many of the conflicting statements found in books, as regards the exact sources of many of the most common vegetable remedies.

The design of the work is merely to give the botanical history of the *Materia Medica*, and to indicate in the most concise manner the properties peculiar to each substance. This, as before said, has been accomplished in the happiest manner, both as regards the mechanical execution and the correctness and beauty of the plates, which are on so large a scale as will render them of essential benefit to teachers of *Materia Medica* in our various schools. As regards accuracy and beauty of design and finish, they have rarely been excelled, and we sincerely hope that such encouragement will be extended to the work, that the author will be induced to extend it beyond the limits to which it is at present designed to limit it.

The present number contains representations of twenty plants, comprising some of the most important medicinal plants, as the Black Hellebore, the Columba, the Opium, Poppy, &c. Many of them are from original designs, and those which are not wholly so, have been so corrected as to render them far superior to those used as the basis of the representation. Among those to which we would invite particular attention, is the figure of *Krameria triandra*, drawn from an original specimen, and differing widely from the distorted and caricatured representation in the *Flora Peruviana*, which has served as a model to all subsequent designers of the plant. The figure of *Drimys chilensis* is likewise original, and is an excellent illustration of a plant, furnishing one of the kinds of Winter's Bark, hitherto overlooked by writers on the *Materia Medica*, or alluded to with doubt.

We cannot too highly recommend this work to the attention of the profession, and feel convinced that it only requires to be known to be appreciated. It is "got up" in a very superior manner in every respect, and at a much more moderate price than books of a similar character are issued from the European press,

and we trust that both the author and the enterprising publisher will be amply repaid, both in fame and in a pecuniary point of view, for the labour and expense to which they have been subjected.

ART. XIV.—*An Examination into the Health and Longevity of the Southern Seaports of the United States, with reference to the subject of Life Insurance.* By J. C. NOTT, M. D., of Mobile, Ala.—(*South. Journal of Medicine and Pharmacy*, January and March,) 1847, pp. 32, 8vo.

WE are gradually obtaining possession of a large amount of valuable information, relative to the influences exerted by climate in various sections of our widely spread country. The principal cities on the sea-board of the Middle and Eastern States, have each been subjected to very accurate investigation, and their relative conditions as to health and mortality exhibited through laborious statistical researches now made public.

In the West, Dr. Spare has laboured in the same cause, and presented tables and arguments illustrative of the influences of the climates of the Western States, on the continuance of life.* We have now, valuable additions from Dr. Nott, of Mobile, who, in the pages of the *Southern Journal of Medicine and Pharmacy*, has favoured us with his investigations into the Health and Longevity of the Southern portions of the Sea-board of the United States.

Among the curious facts developed through statistical researches is that of the greater proportion of those attaining to extreme longevity in the reputed sickly regions of the South, over those of the more healthy districts of the Northern States. The census shows a constant falling off in the proportions living at the several decennial periods, as we trace the numbers from the active to the advanced ages, far more rapid in the Southern and Western States, than in others of the same latitude. But beyond the age of 90, we find the reverse of this.

The more frequent instances of extreme longevity observed in the South, over those in the North, Dr. Nott thus attempts to explain. "May it not be accounted for by the well-known fact, that in very old people, in whom the vital powers are much exhausted, there is little power to resist extreme cold? The difference between town and country at the South, as will be seen by referring to the above table, is not great; but the difference at the North, is 100 per cent. or more, because the inhabitants of cities are not so exposed to extreme cold as those of the country; they are protected from winds by the multitude of houses, and their dwellings are better built for excluding cold. I will here quote a table from Quetelet's '*Recherches sur la reproduction et la Mortalité, de l'homme aux differens ages, et sur la population de la Belgique*,' which he gives 'in order that we may ascertain at what ages extreme heat or extreme cold is most to be feared.' I also add a table from Boston, by Mr. Shattuck.†

	Deaths during Months of		Deaths in July for 100 Deaths in January.	Deaths in Boston over 60.
	January.	July.		
Stillborn,	269	215	0.80	Jan'y, 1.09 per cent.
First month after Birth, .	3,321	1,719	0.52	Feb'y, 1.16 " "
4 to 6 Years,	878	600	0.59	Mar'h, 1.02 " "
8 to 12 "	616	447	0.73	April, 1.02 " "
12 to 16 "	409	420	1.05	May, .80 " "
16 to 20 "	502	545	1.09	June, .69 " "
20 to 25 "	361	796	0.93	July, .77 " "
25 to 30 "	793	724	0.92	Aug., .97 " "
40 to 45 "	818	613	0.75	Sept., .75 " "
62 to 65 "	968	525	0.54	Oct., .94 " "
79 to 81 "	658	332	0.51	Nov., 1.04 " "
90 and upwards,	252	99	0.39	Dec., 1.05 " "

* Hunt's Magazine, vol. xiii.

† Mr. Shattuck tells us, that the "winter months (in Boston) affect old people most unfavourably."

"This table affords a very strong corroboration of the above suggestions, and we might reasonably conclude that the climate of our more northerly States, which is characterized by a very wide range, and sudden fluctuations, is more unfavourable to old age, (as we *know* it to be to the early periods of life,) than Belgium. In our northern cities, old persons and children are both pressed upon by cold, and the mortality amongst the latter in summer is appalling. The worst climate perhaps in the civilized world, is that in the northern portion of the interior of the United States; viz., the northern part of Missouri, Iowa, Wisconsin, &c. We are informed by Dr. Forry that at Fort Snelling, (on the authority of Dr. Wright, a faithful observer,) 2 thermometers in 1834, went up to 116° and 117° Fahrenheit, and the same point is as cold as Moscow in winter. This extreme heat was in the coolest part of the house.

"Abundant evidence could be added to that of Quetelet and Shattuck, illustrative of the influence of cold on the aged, but I should overcharge the subject, and fatigue the reader by more.

"There is still another reason for the great proportion of centenarians seen in Charleston and New-Orleans, which, I think, will be clearly established before we close. Besides being removed from the fatal influence of extreme cold, the old inhabitants who are thoroughly acclimated, are *exempt from the summer diseases of the climate, and have few of winter to contend with*. Life ceases, because the machine is exhausted by the wear and tear of time.

"It has been contended by most writers on vital statistics, that a large proportion of centenarians, so far from proving high longevity of a population, is evidence of the reverse; they are said to exist in the greatest proportion in the most sickly places."

A fact well known along the sea-board of our whole country, even amid the marshes and jungles of the great and small rivers and bays of the Southern States, is that such situations are almost free from miasmatic disorders, and extremely healthy. Why this is so, Dr. Nott thinks it impossible to say. We have long been familiarly acquainted with this fact from personal observation—being a native of a flat alluvial district bordering upon the salt water—and feel perfectly satisfied that we can assign the cause of the exemption of marshy tracts from miasmatic fevers. This is our explanation. So far as the tide flows, the rank vegetation of the low and marshy tracts is kept alive, resisting decomposition until the frosts of autumn prevent its development. The plants thus decay without having undergone that kind of decomposition which produces the most deleterious gases. But wherever vegetable matter is accumulated in the beds, or along the flats of rivers, the subsidence of the water during the hot months leaves the vegetable deposits, and the rank growths fostered during the early part of the season, to decompose and throw off their poisonous emanations in a very concentrated state. So far, therefore, as the tide flows, or the waters retain the same level, throughout the season, health is maintained.

But, wherever the waters subside and leave the beds, banks and fertile flats to the destructive and decomposing influences of heat and moisture, there will sickness be engendered both in man and beast.

Even the distance of a mile or two from the stoppage of tide-water will manifest the existence of deleterious influences in the latter part of summer and autumn, unknown where the water, always coming to a level within the 24 hours, thus keeps vegetation alive.

This observation applies equally to salt water and fresh under the influence of the tide or attaining a certain level at all seasons.

Dr. Nott refers to the subject of yellow fever, or strangers' fever, as it is called in Charleston, and some other southern cities, and also to the country or bilious fever. The former is generated in crowded populations, and seldom attacks an individual more than once, unless he changes his residence, and remains away a sufficient length of time to lose his acclimation. In this respect there is a striking contrast with some other diseases of the South, and more especially with intermittent and remittent fevers, attacks of which tend to establish a strong predisposition to other attacks. Southern physicians have remarked that the newly arrived, plethoric foreigners, for a year or two seem to resist the unhealthy influences of southern climates better than the natives. "It is true," says Dr. Nott,

“that bilious fever attacks with more violence the plethoric stranger and is more often fatal to him; but, on the other hand, this miasmatic poison, (like Harpies, the fabled offspring of *Tellus and Oceanus*,) feeds upon the bloated livers of the native, and drags him prematurely to the grave. So far from being the apologist of the bilious fever regions of the south, I would rank them with the most detestable portions of the globe, out of the tropic of the old continents.”

The immunity against yellow fever possessed by the negro race, is a very remarkable fact, which Dr. Nott thus notices. “I have seen the disease prevail five times in Mobile, and have attended several hundred cases amongst the whites, but not a single well-marked one in a pure blooded negro, and not more than two or three in mulattoes; although there is a greater number of unacclimated negroes and mulattoes here in the summer than whites. The smallest admixture of negro blood, even though the subject be brought from a more northerly state, seems to be a potent antidote against this morbid poison. I know there have been many exceptions in the history of yellow fever, and a memorable one has already been alluded to, in the epidemic of 1819 in this place, when whites, blacks, Indians and mixed bloods were attacked indiscriminately. These exceptions do not seem so remarkable, when we remember that there are many instances recorded where this disease, from unknown causes, has been extensively fatal also to birds and beasts.”

Dr. Nott presents some very interesting tabular statements, exhibiting the condition of the population of Charleston, the diseases producing the mortality embracing a period from 1828 to 1845. In one of his comments, he makes the following statement in regard to visitations of yellow fever: “An examination of our table shows, that although there were light *endemic* visitations, there have really been no *epidemics* of yellow fever for the last twenty years, except those of 1838 and 1839, and in these two years the disease was brought into action by extraordinary causes. A medical friend of Charleston, who is familiar with the facts, and of high authority, writes me, ‘during this year (1838), in April, a large part of the city was destroyed by fire, leaving an immense surface covered with decomposable matter, exposed to the rays of the sun; *many of the cellars and sinks were filled with water which it was impossible to remove, and in this very situation there was a vast number of foreigners occupied in removing the ruins.*’ When there is an increased demand for mechanics and labourers, they will of course come in from other places, and we thus have not only a cause assigned for the disease, but the subjects supplied for it to feed on. The same causes were still in operation to some extent in the following year, 1839. The deaths of *non-natives* in these years were, 482, and 262, more than double the mortality in ordinary years amongst this class.”

With regard to diseases of the liver and spleen, looked upon as the greatest curses of southern latitude, Dr. Nott observes: “Persons at the North, who have read Johnson on the Liver, and others works of English writers on diseases of *hot climates*, have often, without sufficient investigation, regarded the Southern States as similarly situated; but here we see that in Charleston (and so with Mobile and New-Orleans) diseases of the liver are almost unknown, while in Bengal, we are told, ‘one half the deaths are from diseases of the liver.’ I can declare with confidence, and my professional brethren here will sustain me, that I see fewer diseases of the liver in Mobile than of any important organ in the body. I do not think I exaggerate, when I say, that the cases in my practice, belonging to Mobile, do not exceed one a year. This remark only applies to the southern seaports. I have no apology to offer for the bilious fever regions of the interior of the Southern States, where all malarial disorders are seen in abundance.”

Dr. Nott gives some interesting information in relation to the mortality of the coloured population of Charleston, and compares it with that exhibited in some northern cities, where its excess over that of the whites is so remarkable. “To those,” he observes, “who believe that the excessive mortality amongst this class at the North, is attributable to climate alone, and who believe that the condition of the negro is capable of being improved by emancipation, I will say, without fear of contradiction, that if health and longevity (and I might add happy faces) are evidences of physical comfort and content, they are in a better condition in Charleston, (and the Southern States generally,) than any labouring class on the face

of the globe. It is a remarkable fact that this class in Charleston, shows not only a lower mortality than any labouring class of any country, but a lower mortality than the aggregate population (including the higher classes, nobility and all), of any country in Europe, except England, with which it is about on a par. If we could separate the free coloured, the ratio would doubtless be below England, as it is now below her towns taken apart from the country. Freedom and climate combined in Boston, are far more destructive to the negro than slavery and Asiatic Cholera at the South. This scourge, which in 1836, in Charleston, fell most heavily upon the negroes, raised the mortality for that year, to one in 20; while in Boston, it averages about 1 in 15."

Our time does not permit us to notice many other interesting points connected with Dr. Nott's investigations. He has thrown out much valuable information from the comparatively scanty materials he has been able to collect, and being deeply imbued with the proper spirit for investigating such subjects, he will doubtless furnish the public on some future occasion with additional inquiries into the chances of life in the South.

G. E.

ART. XV.—*On Indigestion, and certain Bilious Disorders often conjoined with it. To which are added short Notes on Diet.* By GEORGE CHAPLIN CHILD, M. D., Physician to the Westminster General Dispensary. London: John Churchill, 1847. 8vo. pp. 219.

THIS little volume, though offering nothing of striking novelty, presents an excellent account of indigestion and its attendant ills, and is evidently written by one who has seen much and observed well. Indeed, the author says "the materials for this volume have been gradually collected in the course of several years, during which my attention was closely directed to its subject. Throughout the inquiry, I recorded in a uniform manner—secured by means of printed tables—all cases of indigestion that occurred to me in practice, and by carefully collating these together, I endeavoured to deduce accurate inferences respecting the disease. The opinions contained in this book may be viewed as the conclusions to which I was in this way led." (Preface, p. ii.)

To make the work more completely practical, it was deemed expedient to describe certain hepatic derangements which, blended with the symptoms of indigestion in every possible way, constitute the majority of cases actually presented for treatment.

The earlier chapters treat of the Causes, Physiology, and Morbid Anatomy of Indigestion, and this portion of the subject is very cleverly handled, and shows Dr. CHILD to be well acquainted with the labours of recent investigators. In Chapter IV., on the varieties of Indigestion, the difficulties and inconveniences of any fixed principle of classification are pointed out. A description of the various forms, and prominent symptoms of Indigestion, with its complications, occupies the remainder of this little treatise. We are unable to follow the author in his excellent and detailed account of the innumerable phenomena of this Protean disorder, or to notice the very judicious measures he recommends for their relief. We can only express our conviction of the value of this unpretending volume, treating, as it does, of complaints, which pervade all ranks of society, and which, though not for the time seriously interfering with the daily avocations of the sufferer, render too often his existence cheerless and irksome, and are certain, ultimately, to inflict profound and lasting injury upon the constitution.

In conclusion, we may mention that Dr. CHILD speaks very highly, as an astringent tonic, of the algaravilla, a South American plant, and hitherto used only in the arts. Its medicinal properties he states to be those of an astringent and demulcent; it is soft to the taste, and easily borne by the stomach, hence in dyspepsia may be given earlier in the treatment than most other remedies of the same class. He has found the algaravilla peculiarly suited to the diarrhœa of children. The decoction is made by boiling an ounce of the substance, in twenty-five ounces of water for a quarter of an hour, and straining when cold. The dose for an adult is two or three tablespoonfuls thrice daily. The part of the plant imported consists

of the pods, bruised and agglutinated more or less with the extractive exudation of the seeds and husks. The infusion and decoction contain much tannin, with a large quantity of mucilaginous matter.

M. C.

- ART. XVI.—1. *Seventh Annual Report of the Superintendent of the Insane Hospital at Augusta, Maine, for 1846.*
 2. *Tenth Annual Report of the Superintendent of the Vermont Asylum for the Insane, at Brattleboro, Sept., 1846.*
 3. *Twenty-ninth Annual Report of the Physician and Superintendent of the McLean Asylum for the Insane, for 1846.*
 4. *Seventh Annual Report of the Superintendent of the Boston Lunatic Hospital for 1845, 1846.*
 5. *Fourteenth Annual Report of the Superintendent of the State Lunatic Hospital, at Worcester, Mass., for 1846.*
 6. *The Twenty-third Annual Report of the Physician and Superintendent of the Retreat for the Insane, Hartford, Connecticut, for the year ending March 31st, 1847.*
 7. *Fourth Annual Report of the Superintendent of the New York State Lunatic Asylum at Utica, for the year ending Nov. 30th, 1846.*
 8. *Report of the Pennsylvania Hospital for the Insane, for the year 1846.* By THOMAS S. KIRKBRIDE, M. D., Physician to the Institute.
 9. *The Fourth Annual Report of the Mount Hope Institute, (Baltimore,) for the year 1846.* By WILLIAM H. STOKES, M. D., Physician.
 10. *Annual Report of the Physician and Superintendent of the Western Asylum, Virginia, for the year 1846.*
 11. *Eighth Annual Report of the Superintendent of the Ohio Lunatic Asylum, from Nov. 15, 1845, to Nov. 15, 1846, inclusive.*
 12. *Report of the Superintendent of the Kentucky Lunatic Asylum, for the year 1846.*
 13. *Second Annual Report of the Commissioners and Superintendent of the Hospital for the Insane, to the General Assembly of Indiana, Oct. 31st, 1846.*

1. FROM this, the second report, by Dr. Bates, since he became connected with the Hospital at Augusta, we learn that that Institution is in a flourishing condition, and the number of its inmates in 1846, was greater than in any previous year.

	Males.	Females.	Total.
Patients in Hospital, Nov. 30, 1845	55	30	85
“ admitted during the year	45	57	102
Whole number of cases during the year	100	87	187
Discharged during the year	41	46	87
Remaining Nov. 30, 1846	59	41	100
Of the patients discharged, there recovered	23	23	46
“ “ died	3	2	5
Whole number of patients admitted in 6 years	323	265	588
“ “ discharged	241	216	457
Of whom there were recovered	—	—	217
Besides those discharged there have died	21	10	31

In order to obviate, at this Hospital, those premature removals of patients so generally complained of, by the Physicians of Institutions for the Insane, the Board of Trustees have passed an order requiring six months residence, unless the patient be previously cured, or it be thought expedient for other reasons to discharge him.

The following passage in the report before us being of general application, in some respects, is extracted for the benefit of those whom it may concern.

“ My professional brethren will pardon me, I doubt not, if I express the opinion, that the subject of insanity occupies quite too small a space in their education, and subsequent investigations. Neither private teachers nor public schools give it more than a passing notice. This fact is not peculiar to our state or country. If I have the opinion that not one-half the medical practitioners in Maine, possess a

standard, scientific work wholly to the subject, perhaps no good will come of making it public. But if every devoted physician did possess the requisite qualifications, insane persons could not be as well treated at home as in a Hospital. Whether the disease has been produced directly or indirectly, by a physical or moral cause, or both the scenes and associations, which accompanied, nay, may have produced the malady, are ill calculated to promote its cure. Nor can all the necessary conveniences and appliances be had in a private family, nor can the prescriptions of a physician be there followed and enforced, as they can in an institution fitted for the purpose.

"Without aspiring to be a public teacher, I may be permitted to make a few suggestions to my professional friends, which my limited acquaintance with the subject enables me to offer. I will lay down a single proposition, viz.: Precisely the same *medical* treatment is required, when insanity is present, (which is only a symptom,) as in the same irritations and actions, in similar or the same organs, when that symptom is absent.

"For want of this simple mode of investigation, many physicians, I am confident, take it for granted that inflammation is necessarily present, in all cases of acute mania, and the lancet follows the opinion promptly, perhaps repeatedly. It is not insisted that general bleeding is *never* necessary, but I do believe very few cases require it, and thus more injury is done in most cases to the powers of the brain, than by any other active remedy usually resorted to. Temporary or permanent dementia often follows this depletion. As arterial action is always unequal, local, instead of general blood-letting, would be as efficient, if not more so, and in my opinion more safe.

"Another mistake often made by friends, and physicians is, in considering those cases, in which melancholy is a prominent symptom, as requiring a more tonic and stimulating course than those of mania. This by no means follows as matter of course. The difference often consists in the portion of the organ affected, and not in its vigour, nor action of its vessels.

"Another more common and grave mistake in these cases arises from their being less violent, and occasioning less trouble to those who have the care of them, consequently their proper treatment is neglected, until none which can be adopted will succeed. Organic change has taken place, and the patient drags out a miserable existence, or commits suicide, and the friends lay the flattering unction to their souls, 'that they *have done all they could*;' and so the matter rests."

2. By Dr. Rockwell's report we are informed that, in the Vermont Asylum for the Insane, at the commencement of the year,

	Males.	Females.	Total.
The number of patients was	126	143	269
Admitted during the year	95	102	197
Whole number for the year	215	245	460
Discharged during the year	78	91	169
Remaining Aug. 1, 1846	137	154	291
Of those discharged there recovered			94
" " died			25
Whole number of patients admitted in ten years			1032
Of whom have recovered			434
" " died			84

Dr. R.'s report is as usual very brief, and is mostly occupied with topics which have been heretofore laid before our readers. The following extract gives us some insight into the Doctor's method of treatment.

"Whenever there can be detected any physical disease in any part of the human system, it is treated as in other states of the mind. After all, we depend much on the faithfulness of kind and intelligent nurses, wholesome and nourishing diet, neat and well ventilated apartments, the different kinds of bathing, plenty of exercise in the open air, either by riding, walking, or cultivating the garden and farm, and all such agreeable employment of the mind and body, as shall promote health, and call into exercise those faculties of the mind as are unemployed.

"Reading and writing we consider valuable auxiliaries for the comfort and

restoration of the insane. The patients are furnished with stationery, and are encouraged to write on all subjects except that of their insanity. The practice of writing improves the power of fixing the attention, and tends to restore the lost balance by directing the mind from its delusions, and calling into exercise those faculties which would otherwise lie dormant. Even when they write on the subject of their delusions they disclose the nature of their insanity more clearly than could be learned in any other way."

The general course of moral treatment is the same as in other institutions.

3. By Dr. Bell's report it appears that at the McLean Asylum,

	Males.	Females.	Total.
The number of patients January 1, 1846, was	78	73	151
Admitted during the year	76	72	148
Whole number during the year	154	145	299
Discharged during the year	66	60	126
Remaining at the end of the year	88	85	174
Of the patients discharged there recovered	34	31	65
" " " " died			9

Causes of Death.—Old age, 2; epilepsy, 1; general exhaustion, 1; acute disease of brain, 2; *paralysie générale*, 3.

During the past ten years, from 1837 to 1846 inclusive,

The whole number of patients admitted was	1,383
Of whom there have been discharged restored	715
" " died	128

At the commencement of 1837, there were 71 patients already in the asylum. Adding these to the above number of admissions (1383), the whole number of patients under treatment appears to have been 1454.

A large part of Dr. B.'s report is occupied with an exposition of the collateral, or, strictly speaking, illegitimate subjects heretofore discussed in the reports emanating from the various institutions for the insane. Upon one of these topics he discourses as follows.

"There was also a period in our progress of provision for the insane, in which for an end which alone would justify so repulsive and unprofessional a deviation, namely, the endeavour to arouse attention by the contrast of insane persons in hospitals, or as neglected, it was customary to devote many pages to details, often revolting and painful, of the sufferings and delusions which at all times and places certain cases of insanity may present. The disease of insanity is already surrounded with too many real and factitious features of repulsiveness, to justify any further obstacles to the public mind regarding it, as the well-informed and unprejudiced now do, as a purely physical illness, associated as all severe illness is with many things unpleasant and distressing, and which we naturally shrink from holding up to the world. Should we care to have the extravagancies of ourselves or of our immediate friends drawn up graphically even without colouring or exaggeration, and perpetuated for the gratification of a perverse taste, which sees nothing in such delineations but a proper topic of interest and gratification? Every institution has its cases of extreme severity and of intense interest, deserving of perpetuation and investigation in the proper repertoires of medical science; but if we would continue to hope for and promote a just estimate of the character of insanity as a physical malady, the fewer high painted 'Bedlam sketches' which are offered to the mixed community, the better will it be for the sane, and the more just and humane to those now suffering or destined hereafter to suffer under this severe affliction. That the names of particular sufferers may be thrown under the veil of partial concealment by anonymous references or initials, may lessen the blow, although experience shows how thin this veil is to the individual, but does not prevent the false and ungenerous hue thrown over the malady itself. In regard to all other diseases, affecting for a while the reason or not, it would be considered as in the worst taste, if not a breach of common confidence, to detail the minutiae of symptoms to the world. Nothing in my views can sanction hereafter such an employment of annual reports, even if the object hitherto to be attained, that of arousing apathetic communities, may be accepted as a partial explanation."

4. The report of Dr. Stedman includes a period of seventeen months, from the 1st of July, 1835, to the 13th of November, 1846.

	Males.	Females.	Total.
Number of patients June 30th, 1845	65	55	120
Admitted since	20	29	49
Whole number undertreatment	85	84	169
Discharged	20	22	42
Remaining November 30th, 1846	65	62	127
Of those discharged there were restored	8	12	20
“ “ “ died	6	6	12

Causes of Death.—Consumption, 4; general paralysis, 4; dysentery, 1; epilepsy, 1; exhaustion, 1; marasmus, 1.

In speaking of the causes of disease, in the 49 patients admitted in the above-mentioned period, Dr. S. remarks as follows:

“Home-sickness is a cause assigned for the disease in five cases. This has but in one case before been found on our record, and yet, I am persuaded, it is a more common cause than is usually supposed. It is, in all cases, observed among those who have recently left Ireland, and these are principally females.”

The Boston Lunatic Hospital, like most of the other institutions of the kind connected with the almshouses of our large cities, is but poorly adapted to the purpose of a curative institution. Its accommodations are not adequate to the number of its inmates, a proper classification of the patients is impossible, and the resources for a judicious moral treatment are but small. But, says Dr. S., “we enter on another year with warm anticipations of success and happiness—looking forward as we do to the enlarged means of comfort which will be afforded to all our inmates, on the completion of the new wings of the building, and in the hope that every obstruction to a more improved management will speedily be removed, and every needed facility for success obtained.”

5. Dr. Woodward, whose name has so long been connected with the Massachusetts hospital, has resigned his office in that institution, and has been succeeded by Dr. George Chandler, whose first report is before us. It is preceded by the annual report of the trustees, from which we extract the following high compliment to Dr. Woodward.

“In a peculiarly interesting connection with the contemplated resignation of the first Treasurer of the Hospital, the Trustees are at this time obliged to report the actual retirement from office of its first Superintendent, who had nearly completed a period of fourteen years, exclusively devoted to the regular and punctilious discharge of most laborious and self-sacrificing duties. It is unnecessary for the Trustees to refer, in any detail, to his services. All that the Hospital has been and is; all that has made it a blessing and a glory to the commonwealth, and a model institution for the whole country, is to be attributed, in an eminent degree, to the professional skill, the personal address and energy, the conscientious fidelity, and the pure and ardent philanthropy of Samuel B. Woodward; and while the institution shall exist, his name cannot cease to be most honourably and gratefully associated with it. It was with the greatest reluctance, after repeated efforts to avert it, that the Trustees yielded to his decision to leave the Hospital; but in doing so at last, they were compelled to admit the justness of his views in regard to the state of his health, which had evidently been impaired by his official labours, and also, to defer to the private considerations to which, as they well knew, he had long delayed to give their due weight.”

In regard to Dr. Chandler, the trustees say: “They are happy to express their belief that, under his administration, the usefulness and reputation of the Hospital will be maintained, and that those concerned in its welfare may rely on his ability, and his solicitude to perform all the professional and other services which properly devolve upon him.

	Males.	Females.	Total.
Patients in the Hospital, Dec. 1, 1845	192	168	360
Admitted in the course of the year	138	139	277
Whole number	330	307	637
Discharged	128	142	270

	Males.	Females.	Total.
Remaining at the end of the year	200	167	367
Of those discharged there recovered	72	82	154
“ “ died	20	18	38

Causes of death.—Marasmus 5, apoplexy and palsy 2, epilepsy 2, consumption 4, disease of heart 2, suicide 3, disease of brain 6, lung fever 3, dropsy 1, erysipelas 2, diarrhœa 4, congestive fever 1, rupture 1, exhaustion 1, convulsions 1.

	Males.	Females.	Total.
Whole number of patients admitted in 14 years	1328	1255	2583
“ “ discharged do.	1049	961	2010
Of whom there recovered	573	619	1192
“ “ died	119	94	213

“Ill health,” says Dr. Chandler, “is the most prominent cause of insanity, as classed in our table of causes, which is mostly made up from the representations of relations and others who bring patients to the Hospital. But this cause, arising from its many sources, is undoubtedly the most fruitful of mental derangement. Its tendency is to impair the material instrument of the mind, so that impressions made upon it are responded to in a deranged tone. Ill health is often accompanied by want of sleep, which is one of the most invariable symptoms of recent insanity; and it so often precedes it as frequently to be regarded as a cause.

“There are usually several circumstances, all of which conspire to bring on that state of brain and nervous system that results in mental derangement. The one that seems most prominent to the friends is the one here recorded. It is difficult, and often impossible, to ascertain the true and relative bearings of the various circumstances around us, upon our own minds, but it is much more difficult to ascertain the precise objects that suggest each successive link in the chain of thought that is passing through the mind of another.”

One of the most interesting portions of Dr. C.’s report, is a table “showing the prospect of living for those who are attacked with insanity and do not recover, deduced from one hundred and ninety-three cases that terminated fatally at the hospital.”

The average duration of life of these one hundred and ninety-three persons of both sexes, after becoming insane, was four years, five months and twenty-one days. “The chance of life,” says Dr. C., “for those not labouring under any disease of the body or mind, is computed, at the corresponding ages, by Insurance Co.’s, to be about twenty-five years.”

The moral treatment at the Hospital in Worcester has always been elaborate, and efficiently conducted. During the winter of 1845–6, Dr. Woodward established a school for the patients. It was continued for some time “with interest and benefit to those who took part in the exercises,” but was finally suspended.

6. From Dr. Butler’s report we glean the following statistics:—

	Males.	Females.	Total.
Patients in the Retreat at the beginning of the year	53	63	116
Admitted in the course of the year	50	61	111
Whole number	103	124	227
Discharged	47	62	109
Remaining, April 1st, 1847	56	62	118
Of those discharged there recovered	16	40	56
“ “ died	8	3	11

Causes of death.—Epilepsy 1, paralysis 1, disease of brain 2, marasmus 1, exhaustion 3, disease of heart 1, chronic diarrhœa 1, erysipelas 1.

Whole number of admissions in 23 years	1671
“ “ recoveries “	902
“ “ deaths “	131

“Recovery from insanity alone,” says Dr. Butler, “is frequently not the only benefit patients derive from a prolonged residence in asylums. The seclusion from excitement, and the suspension of their ordinary avocations, give them oftentimes an opportunity, which they would not otherwise have, of obtaining permanent

relief from various chronic maladies that may have had an important influence in producing their mental disease.

"A greater gain than this is not unfrequently found in the improvement of the moral character of those in whom insanity has been induced by the gratification of the appetites, or the indulgence of the passions.

"The observation of other cases like their own; the good order and regularity which surround them; the salutary restraints to which the paternal discipline of the house requires them to submit, together with all the moral and religious influences which are brought to bear upon them during this period of reflection, have in many cases been productive of the happiest effects.

"The lessons thus learned from the errors of the past, and of their ability to avoid them in future, are hardly less essential to their future usefulness and enjoyment, than the relief from mental disease.

"The intimate connection between many of the most prolific of the predisposing causes of insanity and erroneous educational influences, has been too much overlooked. It is a consideration of great importance, and much remains to be learned respecting it. Abundant illustrations may be found in every Lunatic Hospital. We often attribute insanity to some apparent exciting cause, while the full history of the case would show that for its real, though more remote cause, we must go back to the years of early life—to the family and the school where the neglect to teach habits of reverence and submission, of self-denial and self-control, and where the indulgence of the propensities, and the neglect of the better qualities of our nature, have sown the seeds which are now ripening their harvest of sorrow and disease. This is an important subject, neglected now, but by and by to be better appreciated and understood."

7. By Dr. Brigham's report it appears that, at the New York State Asylum,

	Males.	Females.	Total.
The number of patients Nov. 30, 1845, was	143	142	285
Admitted during the year	163	174	337
Whole number	306	316	622
Discharged	119	129	248
Remaining, Nov. 30, 1846	187	187	374
Of those discharged, there recovered	65	68	133
" " " died	13	9	22

Causes of Death.—Inflammation of lungs, 2; marasmus, 7; consumption, 5; convulsions, 2; disease of heart, 2; effusion on the brain, 1; suicide, 1; paralysis, 1; apoplexy, 1.

Whole number of patients from Jan. 16, 1843, to Dec. 1, 1846	1,181
Discharged	807
Of whom have recovered	453
" " " died	66

At the present day, there are but few novelties in the moral treatment of the insane. The subjects alluded to in the following extracts, are among the newest things of this country.

"Recently, we have added to our chapel, a new and valuable organ; it has been purchased with a portion of the avails of our last annual fair, and those anticipated from the next. It is usually played by a patient, and we consider it a valuable addition to our music."

"Schools have been continued, as heretofore, during the winter season; and our confidence in their usefulness in institutions for the insane, increases with every year's experience. Schools, with occasional exhibitions, the acting of original plays, and other literary exercises, together with labour, constitute our best, and, in fact, nearly our only amusements."

"Recently, we have had at the Asylum, several theatrical performances, embracing tableaux, the acting of short original plays, declamation, music, &c., which has not only interested the patients themselves, but elicited the applause of visitors and strangers who were present."

Dr. Brigham, while at the retreat for the insane at Hartford, and during his con-

nection with the asylum at Utica, has made observations on the pulse of 1,234 insane patients.

The results are as follows :

From 40 to 50 beats per minute in 8 patients			
" 50 to 60	"	" 22	"
" 60 to 70	"	" 183	"
" 70 to 80	"	" 233	"
" 80 to 90	"	" 466	"
" 90 to 100	"	" 144	"
" 100 to 110	"	" 124	"
" 110 to 120	"	" 54	"

He has also carefully measured, in several directions, the heads of 1163 patients, and from the data thus obtained, concludes that "the size of the heads of the insane does not differ materially from that of the sane."

From a section of the report devoted to the hereditary predisposition to insanity we make the following extract.

"Of 1181 patients who have been in the asylum, viz., 594 men, and 587 women, 315 were known to have insane relatives. That many of the others were thus predisposed we do not doubt, but we were not able to learn anything respecting their relatives; 175 were known to have insane parents, viz., 79 men, and 96 women.

"It would appear from our inquiries, and they have been very carefully conducted, that insanity is a little more likely to be transmitted by the mother than by the father, and that mothers are considerably more likely to transmit to daughters than to sons; while the fathers most frequently transmit it to sons. Thus out of 79 men, 42 had insane fathers and 35 insane mothers, and in two instances both parents were deranged; while of 96 women, 37 had insane fathers and 56 insane mothers, and three inherited a predisposition to insanity from both parents."

In the remarks upon the suicidal form of insanity it is stated that, of the 1181 patients admitted into the asylum, 156 were disposed to suicide. "It is, however," says Dr. Brigham, "a consoling fact, that this alarming variety of insanity is quite often a curable one. Among the most complete and permanent recoveries from insanity we have ever known, are a considerable number, who, for several months, were very strongly inclined to self-destruction."

The most valuable part of the report, particularly in a medico-legal point of view, is an essay upon homicidal insanity, evidently the result of much observation, reading, and reflection. We have room for but two extracts—the first, a classification of homicidal cases; the second, an important observation in reference to the frequently alleged test of insanity—a *knowledge of right and wrong*.

"According to our observation, the homicidal insane may be arranged with propriety in six classes; those belonging to one class appear to be actuated by motives or feelings different from the others, or the circumstances accompanying the act indicate a difference in their mental condition.

"1st. Those who take life in a paroxysm of passion or fury.

"2d. Those who commit a homicide from delusion, who are deceived and misled by their hallucinations, illusions, or disordered imaginations.

"3d. Those who kill indiscriminately and apparently from a love of taking life, from a diseased propensity and conscious desire to destroy others, against which act neither reason nor conscience remonstrates.

"4th. Those who kill without any apparent motive, from a sudden impulse, but of which they are not conscious, and who retain no recollection of anything that prompted them to the act.

"5th. Those disposed to commit the same crime, and without motive, from an irresistible impulse, of which, however, they are conscious, and against which reason often remonstrates.

"6th. Those who kill from imitation, or from an insane love of notoriety.

"We have endeavoured at various times to ascertain from the insane themselves their ability to distinguish right from wrong, and for this purpose have questioned on this subject in various ways several hundreds, and we cannot better exhibit its inapplicability as a test of their responsibility, than to say, what the truth enables

us to say, that a large proportion of the insane now at this asylum appear to understand its distinctions as well as persons in the community at large."

	Males.	Females.	Total.
8. The number of patients at the Pennsylvania Hospital for the Insane, Jan. 1st, 1846, was			169
Admitted during the year			167
Whole number for the year			336
Discharged			175
Remaining Dec. 31st, 1846	86	75	161
Of the patients discharged there were cured			89
" " " died	7	7	14

Causes of death.—Organic Disease of Brain, 2; Exhaustion following acute mania, 4; Epilepsy, 2; Pulmonary consumption, 1; Marasmus, 2; Suicide, 1; Cholera Morbus, 1; Delirium of fever, 1.

In reference to the case last mentioned, Dr. Kirkbride makes the following very correct observations. In several instances, where the patient was suffering under the delirium of fever or of acute cerebral inflammation, we believe we have known the disease hastened to a fatal issue by subjecting the person to the exposure and fatigue of a ride to an asylum several miles distant.

"Although the general principle is well established and cannot be too steadily insisted on, that insanity is curable in proportion to the early period at which it is placed under treatment, and that a prompt removal from familiar scenes is commonly desirable, still a certain class of cases does exist, in which much harm is often done, and great disappointment in results produced, by a too early removal from home and the care of friends. The class alluded to is of that peculiar form, in which many days are frequently required to decide correctly whether there is not more acute inflammation of the brain or its membranes, than simple uncomplicated insanity. If it be the former, it is hardly necessary to say that all exposure, joined perhaps with a long journey, is certainly productive of serious injury, and not unfrequently of fatal results. Where there are any grounds for these doubts, or where patients are greatly prostrated from any cause, it will always be found best and ultimately most satisfactory to their friends, to have them retained at home, even with great temporary inconvenience, till the nature of the case is clearly made out, or until sufficient strength is regained to permit their removal without any risk from the fatigues of the journey. A very few weeks, often a single one, will be sufficient to remove all ambiguity, and the result will rarely fail to be such as to compensate for any additional trouble to which the patient's friends may have been subjected. The chances of an early recovery, if the disease proves to be insanity, will not be at all diminished by this course."

	Males.	Females.	Total.
Patients admitted since opening of Hospital	542	394	936
Discharged	456	319	775
Of whom were cured	239	163	402
" died	50	34	84

A section of the report is devoted to the "provision for chronic cases," in which the Doctor advocates the keeping of such cases in curative institutions. "While life lasts," says he, "every case should be considered under treatment if not to cure, at least to keep it from becoming worse."

"Every year presents us with cases that should teach us never to despair—at least to treat all as though there was still hope of returning health—to surround our oldest and worst cases with as many as possible of the influences that would be likely to impress favourably the most recent and hopeful patients, and as few as can be of those which might tend to retard their restoration."

From that part of the report which is devoted to moral treatment, we make the following extracts; the first relating to lectures, the second to the introduction of a new, and, to us, apparently valuable *employee* into the institution under his care.

"No experiment in the way of combining profitable instruction, mental employment and amusement, has, upon the whole, resulted in such entirely good results, without a single counterbalancing objection."

"At least twice every week for nearly six months, we had before us the gratifying spectacle of near one hundred of our household, assembled to listen to lectures or to witness exhibitions, paying, on all occasions, a respectful and quiet attention to the remarks of the lecturers and the varied illustrations, and with a degree of propriety of general behaviour, that certainly would not compare unfavourably with many of the lecture rooms in our cities."

"In the female division of the house, we have this year commenced the employment of a lady who, released from the care and supervision of the wards, will be able to devote the whole of her time as a companion to the patients, aiding them in their studies, teaching those whose early education has been neglected, reading in the wards, when desired, encouraging and assisting in fancy and useful needlework, or, when required, devoting hours of a day, or even whole days to a single patient, who has just, for the first time, perhaps, left home, and feels sensibly the loneliness,—useful as it often is, of a residence among entire strangers; or when serious illness arises, to be so constantly present, as a counsellor and aid to the regular attendants, as to know that all little directions are faithfully carried out, and that all little comforts are properly attended to."

9. At the commencement of the year 1846, in the department for the insane of the Mount Hope Institution, at Baltimore,

	Males.	Females.	Total.
The number of patients was	18	39	57
Admitted during the year	70	37	107
Whole number for the year	88	76	164
Discharged	68	36	104
Remaining	20	40	60
Of those discharged there recovered	54	14	68

This large per centage of cures is accounted for, from the fact that a very large majority of the patients restored to health were not insane, but suffering under mania à potu. The statistics, as we understand them, for they are somewhat ambiguous, should be as follows:

	Males.	Females.	Total.
Recovered from Insanity	10	11	21
" " Mania à potu	44	3	47
Died of Insanity	3	5	8
" Mania à potu		3	3

As the subject of moral insanity is one not well understood, and, indeed, as there are many people, both professional and non-professional, who disbelieve in the existence of such a disease, we extract the views of Dr. Stokes thereupon.

"It will be perceived that we have to record an increased proportion of cases of moral insanity. This is a species of derangement which displays itself by a perversion of the affections, temper, habits, and moral feelings and dispositions of the individual. A knowledge of the fact cannot be too generally extended, that this form of insanity is very often the result of a faulty education of over-indulgence in early life. It often results from the parent not having sufficiently restrained the caprices and the temper of the child, and from neglecting to check occasional transports of excessive irascibility. By a too great indulgence, and a want of moral discipline, the passions acquire greater powers and a character is formed subject to caprice and to violent emotions. This unchecked liberty of action degenerates, as life advances, into an unbridled licentiousness; and thus a predisposition to insanity is laid in the temper and moral affections of the individual. In such persons the derangement is not that of perverted judgment, but of perverted moral sentiment; there is a propensity to commit every kind of mischief, and to display the utmost malevolence without any ground of provocation. A deadly hatred is conceived for the nearest relative, as the father or mother. This condition of mind may eventually lead to acts of dangerous violence, or even to criminal acts, and confirmed and incurable insanity. Hence the importance of cultivating the proper regulation of the disposition and the feelings at a period of life when they can be controlled by parental authority. Another fertile source of this species of derangement has appeared to be an undue indulgence in the

perusal of the numerous works of fiction, with which the press is so prolific of late years, and which are sown broadcast over the land with the effect of vitiating the taste and corrupting the morals of the young. Parents cannot too cautiously guard their young daughters against this pernicious practice. We have had several cases of moral insanity, for which no other cause could be assigned than excessive novel reading. And nothing is more likely to induce this disease than that education which fosters sentiment, instead of cherishing real feeling such as results from the performance of active benevolence, and the sacred duties of ordinary life, and of religious obligations, which awakens and strengthens the imagination without warming the heart; and to borrow the language of an eminent divine, places the individual "upon a romantic theatre, not upon the dust of mortal life."

10. By Dr. Stribling's report it appears that in the asylum at Staunton, Virginia, at the commencement of the year 1846,

	Males.	Females.	Total.
The number of patients was	114	68	182
Admitted in the course of the year	46	46	92
Whole number during the year	160	114	274
Discharged	37	20	57
Remaining, Dec. 31, 1846	123	94	217
Of the patients discharged, there recovered	18	14	32
" " " died	15	5	20
Whole number from July 1, 1836, to Dec. 31, 1846	325	183	508
Discharged	219	98	317
Of whom were cured	118	62	180

It appears from the report, that Dr. Stribling is endeavouring to introduce manual labour, to as great an extent as possible, among his patients. A building containing several apartments intended for workshops, has recently been erected. "In addition," says Dr. S., "to shoemaking, carpentering, cabinet making, mat-trass and broom making, we design, the ensuing year, manufacturing hats. One of our attendants, who is an experienced and skilful workman at this business, has consented, for a small increase of wages, to undertake, with the aid of the patients under his care, the making of all the hats needed for the institution: and as the outlay for tools and materials will be comparatively trivial, and the facilities for furnishing profitable employment to our inmates be thus increased, we will not fail to avail ourselves of so important an acquisition to the mechanical department."

11. At the State Asylum, Columbus, Ohio, on Nov. 15, 1845,

	Males.	Females.	Total.
The number of patients was			224
Admitted during the year	88	87	175
Whole number under care			399
Discharged during the year			108
Remaining, Nov. 15, 1846	150	141	291
Of those discharged, there recovered			71
" " " died			18
Whole number of patients in eight years	461	405	866
" " " discharged	316	259	575
Of whom, have recovered	205	153	358
" " " died	53	39	92

Causes of Death.—Inflammation of liver, 1; dropsy, 4; inflammation of brain, 4; fever, 8; apoplexy, 2; palsy, 4; consumption, 10; epilepsy, 15; marasmus, 11; diarrhœa, 11; dysentery, 12; inanition, 7; atrophy, 3.

Dr. Aul gives the following account of an epidemic, which has visited the institution in the course of the year.

"Winter commenced early, and with it came an epidemic fever of a synochal grade, which continued with us a long while, and was severe. It did not attack a great many persons at the same time, but every case proved obstinate, so

that between the different inmates and attendants who were taken, and the duration of the disease in each, we were not without sickness in the institution, from the beginning to the end of the season. The fever was attended with a hot, dry skin, quick and frequent, but not strong pulse, slight hacking cough, dull pain in the forehead, dry tongue, tumid, red lips, constant mental langour, much irritability of the system, some tendency to diarrhœa, and great prostration of strength; and as it advanced and assumed the continued form, there was a strong tendency to genuine typhus fever. In a few cases, the typhoid character of the disease was very distinct, and in all, there were tedious illness and protracted suffering. Three deaths occurred amongst the patients. The attendants and assistants all recovered. In one of the fatal cases, there was so much dryness of the throat and tongue, with sordes upon the teeth, that neither drinks nor medicines of any account could be given. The poor fellow could not swallow even a few drops of water, for several days before his death. The others who died were a long time ill, and wonderfully reduced in flesh.

"The principal causes of this epidemic were, undoubtedly, cold, or atmospheric vicissitudes."

There is some difference of opinion among those who have devoted their time to the interests of the insane, in regard to the comparative merits, as places of recreation and exercise, of open airing courts and verandahs, enclosed under the same roof as the asylum buildings. The opinion of Dr. Awl on this subject, is given in the following quotation:

"When the first edifice was erected, we followed the example of many old institutions, in providing court-yards with high fences for the use of the patients, that they might enjoy the benefit of exercise in the open air. But experience soon demonstrated the uselessness of this arrangement in a climate of so much variableness as ours, in which but few days occur in the year, when patients could safely be permitted to lie about upon the ground. A habit to which many lunatics incline, and which they almost always practice in these yards. In supplying their place, we followed the example of the State Hospital at Worcester, in Massachusetts, by erecting verandahs at the corners, for exercise and recreation, and we have never had the least reason to be dissatisfied with the change. The verandahs are always ready, in all seasons, and in all kinds of weather; and are more cheerful, and less forbidding than court-yards. They are also dry, neat, and clean, so that patients can follow out their inclinations in comfort without expense."

12. At Kentucky Lunatic Asylum, at the commencement of the year 1846,

	Males.	Females.	Total.
The number of patients was	125	87	212
Admitted during the year	57	33	90
Whole number	182	120	302
Discharged during the year			77
Remaining	129	96	225
Of those discharged there recovered			32
" " died			27

Causes of Death.—Epilepsy, 11; Consumption, 8; Old Age, 4; Chronic disease of liver, 1; Enteritis, 2.

There is but little interesting matter, in a general medical point of view, contained in the report of Dr. Allen. This is not the Doctor's fault, but is readily accounted for by the following extracts.

"The failure of our efforts to get into the Asylum recent cases of the disease, will appear, when it is observed, that of ninety committed during the year, only twelve have been such, while the remainder, exclusive of idiots and epileptics, will average a duration of disease of four years. As directly bearing on this point too, we may here remark, that of the twelve recent cases, ten have recovered, and of the old, only ten of the seventy-eight admitted this year."

"We have thought it necessary in this, as in former reports, to attempt to enter into statistical detail, in laying before you a report of our Asylum. So limited and so little to be relied on, is the information we have been able to gather, in a very large majority of instances, as scarcely to be worth recording; and so few are

the cases which have come under our observation, of which accurate histories are obtained, that no general principle, in relation to the malady, can be illustrated by them. Since, therefore, nothing is to be gained important to the particular economy of this institution, or the cause of science, we forbear to incur this report with more than appears essential to give a general view of its progress.

13. The following extract, from the second annual report of the commissioners of the Indiana Hospital for the Insane, exhibits the condition of that institution at the close of October, 1846.

Immediately upon the passage of the law last winter, authorizing and directing the commissioners to erect a Hospital building, in accordance with the general plan recommended to the favourable consideration of the Legislature in their last year's report, they took active steps to carry it into effect. They have the pleasure of announcing to the present General Assembly, that the building has been carried up to the top of the basement story, and finished in time to be secure from the liability of injury from freezing. The walls have been placed under cover, and everything is in readiness to prosecute them as early in the spring as the weather will admit.

"The first thing which claimed the consideration of the board under the law, was the appointment of a suitable superintendent. Being sensible of the great importance of having this position well filled, it seemed to them, for many reasons, peculiarly proper that that position should be tendered to Dr. J. Evans, of this city, (Richmond.) He had been the first to press the duty of making provision for the insane of this State, upon the attention of the Legislature; and from his general character, professional standing, and the attention which he was believed to have devoted to the subject, it was inferred that he was well qualified for the discharge of its responsible duties. After several months of active operations in prosecuting the work, the board take pleasure in testifying to the careful, prudent, and economical manner in which Dr. Evans has discharged these duties."

All the institutions, the reports of which are here noticed, are in a flourishing condition. They are mostly filled with patients to the extent of their accommodations. Nearly all of them recently have been, or are about to be enlarged.

The Rhode Island and the New Jersey State Asylums are nearly completed, and will probably be opened the ensuing autumn.

P. E.

ART. XVII.—*An Analysis of Physiology: being a condensed view of its most important facts and doctrines. Designed especially for the use of Students.* By JOHN J. REESE, M. D., Lecturer on Materia Medica in the Medical Institute of Philadelphia, Fellow of the College of Physicians, Secretary of the Philadelphia Medical Society. 12mo. pp. 314. Philadelphia, 1847, J. G. Auner.

WE confess that we are no great friends to manuals, outlines, digests, and analyses, nor, indeed, to any of the other short cuts to a knowledge of any of the branches comprised in a complete course of Medical Studies. They are apt to give superficial if not inaccurate views of the present condition of the subjects of which they treat, and to prevent that proper distinction being made between well established facts and conclusions, and statements which require still further elucidation and confirmation. They are, also, apt to substitute a mere recollection of established facts, for that intimate acquaintance with the subject which results from its systematic study throughout its history and most minute details. Whatever may be the objections urged against works of the class alluded to, they will, nevertheless, be sought after by the student, and if not supplied by those who are fully competent to the task of preparing them, they will be by others less qualified. As an introduction to the study of any given branch, a manual presenting an accurate, but "condensed view of its most important facts and doctrines," may not be without its value, but the difficulty is to confine its use to the young student—to induce him to give it up sufficiently soon for the less attractive pages of the systematic treatise, with its detail of experiments and observations—its cautious weighing of each fact—its careful testing of the legitimacy and validity of every deduction, and the slow measured pace with which it arrives at truth.

If at any time, a manual can become useful, as we have supposed it may, it must be just such a one as that before us—which, with all its conciseness, is clear and accurate—and presents certainly a very fair and distinct outline of the physiological facts and opinions, which are, at present, received as well established—as well as of those which, if not fully verified, are considered to bear the impress of truth. We have indeed, been much pleased, in perusing the analysis of Dr. Reese, with the skilful manner in which his task has been accomplished. From the pages of the work before us, a very good general idea of physiology may, in fact, be obtained. It may be of service to those who are commencing the study of that branch of science, as well as a convenient remembrancer or review of what they have already learned, to those who are about to undergo an examination. In this light alone it may be recommended as one of the best with which we are acquainted.

D. F. C.

ART. XVIII.—*Observations on Aneurism and its Treatment by Compression.* By Dr. O'BRYEN BELLINGHAM, M. D., Edin., one of the Surgeons to St. Vincent's Hospital, &c. Dublin, 1847. 12mo. pp. 181.

Too much praise cannot, we think, be awarded to the Dublin surgeons for the reintroduction of the treatment by compression for the cure of aneurism, and of this praise, no mean share belongs to Mr. Bellingham. The true theory upon which compression effects the cure, was several years since advanced by him, and in the present volume pathological evidence is adduced to show its correctness. In addition to this, it contains a concise sketch of the history of the treatment of aneurism by compression from the earliest period to its present improved state, together with a description of the various instruments which have been employed for this purpose, the advantages which compression possesses over the ligature, with rules for the guidance of the surgeon in its application, and an abstract of every case known to the author in which this treatment has been used. The principle established by Mr. Bellingham is, that for the cure of aneurism by compression above the sac, an absolute interruption to the circulation through the vessel is not necessary, the process being identical to that by which nature sometimes effects a spontaneous cure; viz., the gradual deposition of the fibrine of the blood in the sac, until it is completely filled up and no longer permits the entrance of that fluid. The practical deduction from this is, that the pressure need not be so great as entirely to interrupt the circulation at the point compressed, and that our object should be simply to diminish the current and thus favour the deposit.

In using compression, Mr. Bellingham prefers making it by means of two instruments applied upon different parts of the limb, which are to be alternately tightened and relaxed, as by so doing the patient is enabled to bear it better and longer than would be possible under other circumstances.

As to the instruments used for applying the pressure, he observes that their shape and construction are matters of less importance than is generally imagined. The essential points in an instrument for compression are, that it should admit of being readily applied; that its principle should be so simple as to be easily understood by the patient; and that it should affect the object intended with as little inconvenience as possible. A broad soft pad will, Mr. B. thinks, generally be found to answer best, and the counter pressure ought to be distributed over as large a surface as possible. As to the sites at which the pressure may be applied on the lower limb, either the point where the artery crosses the horizontal ramus of the pubis; between Poupart's ligament and the point at which the saphena joins the femoral vein; from the middle third of the thigh down to the opening through which the artery passes to the back of the limb, are any of them eligible situations for it. Pressure upon the femoral vein he has never known attended with ill consequences. In regard to the degree of compression, it at first ought always to be light; after a time when tolerance is established, we may increase it to the degree we consider necessary; but as before observed, it need never be so great as to interrupt completely the circulation in the artery at the point upon which it is applied.

The subjoined summary which we have drawn out from Mr. B.'s abstract, shows the reported cases of femoral and popliteal aneurisms which have been treated by pressure since 1843.

No.	Age.	Surgeon.	Seat of Aneurism.	Duration of Compression.	Result.
1	30	Hutton	Popliteal	28 days	Cured
2	55	Cusack	"	31 days	Cured
3	32	Bellingham	"	2 days	Cured
4	30	Liston	Femoral	56 days	Cured
5	29	Harrison	Popliteal	93 days	Cured
6	53	Liston	Femoral	30 days	Cured
7	33	Bellingham	"	43 days	Cured
8	28	Kirby	Popliteal	53 days	Cured
9	32	Allen	"	57 days	Cured
10	27	Greatrick	"	21 days	Cured
11	26	Cusack	"	7 days	Cured
12	29	Porter	"	24 days	Cured
13	30	Cusack	"	"about 20 days"	Died suddenly from disease of heart 48 hours after pressure had been removed. All pulsation had ceased.
14		Porter	"	20 days, but continued under treatment for 28 days afterwards	Cured
15	32	O'Ferral	"	33 days	Cured
16	38	Jolley	"	40 days	Cured
17		Macdonnell	"		Cured
18	38	Dartnell	"	7 days	Cured
19	30	Mackern	Femoral	36 days	Cured
20	32	Stork	Popliteal	91 days	Cured
21	24	Stork	"	22 days	Cured
22	23	Cusack	"	43 days	Cured
23	43	Sunter	"	several days	Cured
24	38	Bellingham	"	Pulsation continuing some time after compression a galvanic current was passed through the sac. Seven days after which he was seized with shivering and erysipelas and died 6 days afterwards.	
25		St. Vincent's Hospital	"		Cured
26	27	Armstrong	"	106 days	Cured
27	42	Harrison	"	Kept up for a fortnight, when the operation was performed at the request of the patient.	

Mr. Bellingham's little work is well worthy of attentive perusal, and we feel a confident hope that henceforth another formidable operation, as ligature of the femoral vessel, even under favourable circumstances unquestionably is, may in a great majority of instances be avoided. In this country external aneurisms are not common, and we are aware as yet of no instance in which the treatment by pressure has of late years been used.

G. W. N.

ART. XIX.—*A Treatise on the Diseases of the Eye.*—By W. LAWRENCE, F. R. S., Surgeon Extraordinary to the Queen, Surgeon to St. Bartholomew's Hospital, &c. &c. A New Edition, with many Modifications and Additions, and the introduction of nearly two hundred illustrations. By ISAAC HAYS, M. D., Surgeon to Wills' Hospital, Physician to the Philadelphia Orphan Asylum, &c. &c. Philadelphia, Lea and Blanchard, 8vo. pp. 900.

THE issue of a second edition of Dr. Lawrence's very excellent treatise on the Diseases of the Eye, with additions and illustrations by Isaac Hays, M. D., is a satisfactory evidence of the high estimation in which the work is held by the medical profession in this country, and may we not hope that this, with the other good works on Ophthalmic Surgery, now so readily to be obtained, will have the effect of inculcating correct principles in the diagnosis and treatment of so important a class of diseases, and about which there is still such lamentable ignorance.

For obvious reasons, it would not be proper for us in this journal to express our estimate of the value of the additions made by the editor, but we may state that they are numerous, that the illustrations so useful to the student, have been considerably augmented, and that the whole work is got up by the enterprising publishers in a superior manner. G. F.

ART. XX. *Proceedings of the National Medical Conventions held in New York, May, 1846, and in Philadelphia May, 1847.* Philadelphia: printed for the American Medical Association, 1847. 8vo. pp. 175.

WE are enabled by an accident, which prevented this form from being put to press in its regular order, to announce the publication of this interesting volume. We need scarcely commend it to the careful consideration of every medical man in the United States, for all must feel a deep interest in the great movement which has been commenced to elevate the dignity and character, and to extend the usefulness of our noble profession. This volume contains the minutes of the proceedings of the Conventions held last year in New York, and the present one in Philadelphia, with the reports of the several committees presented to the latter body. These reports are, 1st, of the Committee on the Organization of the National Medical Association; 2d, of the Committee on a Uniform and Elevated Standard of Requirements for the Degree of M. D.; 3d, of the Committee on Preliminary Education to be required of Medical Students; 4th, of the Committee to Prepare a Code of Medical Ethics for the government of the profession throughout the United States; 5th, of the Committee on the Separation of Licensing and Teaching; 6th, of the Committee to consider the Expediency, and (if expedient) the Mode of Recommending and Urging upon the several State governments the adoption of measures for a Registration of the Births, Marriages, and Deaths of their several populations; and last, of the Committee appointed "to prepare a Nomenclature of Diseases adapted to the United States, having reference to a General Registration of Deaths."

We have not the space at present, but may take a future opportunity to review these reports.

The ball of reform has now been set in motion, and with an impetus which will defy all opposition to arrest its onward progress.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Physiology of the Human Voice.*—By JOHN BISHOP, Esq. After premising a brief description of the system of organs which are subservient to the voice, the author proceeds to consider the several theories which have been devised to account for its various modifications. These theories have for the most part been founded on the laws which regulate the vibratory movements of streaked membranous surfaces; and the investigation of those laws has accordingly occupied the attention of many eminent mathematicians, such as Euler, Bernoulli, Ricatti, Biot, Poisson and Herschel; but it is a subject requiring the most profound analysis, and involving the resolution of problems of much greater complexity than the laws of the vibrations of either strings or bars. The assumptions which are necessary in order to bring the subject within the reach of analysis, namely, that the membrane is homogeneous in its substance, and of equal thickness and elasticity throughout its whole extent, are at variance with the actual conditions of the vocal organs, which are composed of tissues differing in thickness, density, and elasticity, and of which the tension is indeterminate; circumstances which present insuperable obstacles to the attainment of a mathematical theory of their vibrations.

The author, after giving a critical account of the experiments made by Biot, Willis, Müller, Cagnaret la Tour, and De Kempelin, on the vibrations of membranous laminæ, examines the various actions of the vocal organs during the production of the more simple tones; and considers more especially the office of the vocal ligaments, in regulating the pitch of the voice, which he considers as resulting from variations in their length and tension conjointly. By applying to the chordæ vocales, the formulæ of vibrating chords, he traces the influence which is exerted on their movements by the mucous membranes; and finds that they obey, to a certain extent, the laws of vibratory strings.

The analogy between the action of the glottis and that of a reed is next examined, and an opinion expressed that the movements of the glottis in the vocalization of the sound partake of the nature of the reed during the partial opening and shutting of the rima glottidis.

The author next investigates the acoustic relations between the actions of the glottis and that of the vocal pipe, and the acoustic effects of flexible membranous tubes on a column of air vibrating within it, and finds that the structure of the trachea, and of the soft parts above and below the larynx, is adapted to vibrate synchronously with any note that may be formed in the larynx. The falsetto voice may be produced either by the partial closing of the glottis, or by a nodal division of the vocal chords, the pitch of the sound in the production of this peculiar modification of the voice being such, that the column of air in the vocal tube is of the precise length requisite to vibrate in unison with the larynx. The inquiry is further extended to the sources of the various tones of the voice, in sing-

ing, such as the bass, tenor, contralto, and soprano; together with their subdivisions of barytone, mezzo-soprano, and soprano-sfogata; and to the places which they occupy in the musical scale. Independently of the falsetto, the compass of the natural voice rarely exceeds two octaves; although in some cases, as in those of Malibran and Catalani, it may extend even beyond three. The voice in singing, is modulated by the contraction or relaxation of the velum, uvula and fauces. The author lastly adverts to the attempts that have, at various times, been made by the Abbé Mical, Faber, Kratzeustein, De Kempelen, Willis, Wheatstone, and others, to imitate articulate sounds by mechanism.

Having this examined the human voice as resulting from the vibration of membranous ligaments, in obedience, first, to the laws of musical strings; secondly, to those of reeded instruments; and thirdly, to those of membranous pipes; he arrives at the conclusion, that the vocal organs combine, in reality, the actions of each of these instruments, and exhibit in conjunction, the perfect type of every one of them.—*Proceedings of Royal Society*, No. 65.

2. *On the Anatomy and Physiology of the Vascular Fringes in Joints and the Sheaths of Tendons.*—By GEORGE RAINEY, Esq. It has been generally believed that the folds of synovial membrane, which project into the articular cavities in the form of fringes, contain merely globules of fat, and are subservient only to the mechanical offices of filling up spaces that would otherwise be left vacant during the movements of the joints. By a careful examination of their real structure, with the aid of the microscope, the author has found that they present an arrangement of vessels quite peculiar to themselves, and bearing no resemblance whatever to that of the vessels which secrete fat; together with an epithelium, remarkable by its form and disposition, and characteristic of organs endowed with the function of a special secretion. He has traced the presence of these synovial fringes in all cavities which contain synovia; that is to say, not only in the joints, but also in the sheaths of tendons, and in the bursæ mucosæ. When well injected, they are seen under the microscope, to consist of two parts; namely, a convolution of blood-vessels, and an investing epithelium. These convoluted vessels do not enclose, by their anastomoses, spaces like those capillaries which secrete fat, and which are of a much smaller size than the former; and the epithelial investments, besides enclosing separately each packet of convoluted vessels, sends off from each tubular sheath secondary processes of various shapes, into which no blood-vessels enter. The lamina itself, forming these folds and processes, consists of a very thin membrane studded with flattish oval cells, a little larger than blood corpuscles, but destitute of nucleus or nucleoli; presenting none of the characters of tessellated epithelium, but corresponding more to what Mr. Goodsir has termed germinal membrane. From all these facts, the author concludes that the proper office of this structure is to secrete synovia; an office which Cloptan Havers had assigned to them, as long ago as the year 1691, although his opinion has not been generally adopted by later physiologists.—*Proceedings of Royal Society*, No. 65.

3. *Functions of the Pneumogastric Nerves.*—M. SANDRAS read to the Academy of Sciences of France, January 18th, a memoir, the joint labour of himself and M. Bouchardat, the object of which was to determine the importance of the pneumogastric nerves in the process of digestion. With this view they instituted a series of researches to ascertain:—

1. The manner of dying in animals in whom the pneumogastric nerves have been divided.

2. The function of these nerves in digestion.

3. Their function as regards the production and absorption of chyle.

4. Their function in reference to the digestion of fecula.

As a secondary point they wished to determine whether, and how, the divided nerves are capable of uniting. Their experiments are arranged in two series, one having reference to the phenomenon attendant upon the entire section of the nerves; the second taking account of the results of successive divisions of the nerves. The simultaneous section of both nerves gives rise to phenomena which establish the following facts:—

1. Rabbits and dogs do not die immediately when a piece of the nerve of twenty

millimeters in length is removed opposite the cricoid cartilage. These animals may survive several days without great distress.

2. In animals thus operated upon the food passes the cardia in small quantity or not at all.

3. In dogs, although digestion has commenced, it is arrested by division of the nerves.

4. The digestion of amylaceous matters in the intestines is not materially interfered with.

5. These nerves are essentially motor.

The second class of experiments proves:—

1. That dogs survive four or six days after the section of the second nerve, and sixteen or seventeen after that of the first, when the two nerves are divided at different times.

2. That animals thus treated eat with avidity, but do not exhibit an unintelligent voracity. They cease to feed as soon as the œsophagus becomes distended.

To recapitulate, the authors consider that they have established that the *movements of the stomach and digestion* are interrupted by the simultaneous section of both nerves in the neck; and that *intestinal digestion* continues in spite of this division.

4. *Formation and Structure of Membrana decidua.*—The account which Dr. SHARPEY gave of the formation and structure of the membrana decidua in the uterus of the bitch, and which he inferred might apply to this membrane in the case of the human female, as also of all viviparous animals, has been amply confirmed by Bischoff. (*Müller's Archiv.*, Heft ii., 1846, p. 111.) Having had the opportunity of examining the uterus of a woman supposed to have been impregnated about three weeks before death, he was enabled to demonstrate quite satisfactorily, that, as Dr. Sharpey had suggested, the membrana decidua, in the human female as in the bitch, is merely the ordinary mucous membrane of the uterus, considerably developed, and that it consists essentially of enlarged uterine follicles and their blood-vessels, together with an unusually large quantity of secretion which these follicles have poured out.* The internal surface of the uterus presented an appearance quite different from its ordinary one, being finely villous; and this was especially evident on placing it in water, or examining perpendicular sections of it. The surface itself, when looked upon from above, appeared as if perforated by a number of small apertures, or covered with numerous white points, and these, when examined by the microscope, were found to be the openings of cylindrical glandules. These glandules, or follicles, were from $1\frac{1}{2}$ to 2 Paris lines in length, were held together by a transparent material, and terminated each by a blind extremity, which rested on the fibrous tissue of the uterus. They ran a somewhat wavy course, but never branched or anastomosed. Previous to impregnation it seems to be exceedingly difficult to discover these glands in the mucous membrane of the uterus. Probably they then exist in a very undeveloped state, but immediately on the occurrence of conception increase rapidly, and exude an abundant secretion. Of these glands and their secretion (together with blood-vessels) the membrana decidua and later on the placenta essentially consist. The statement that a membrana decidua exists in the Fallopian tube, as well as in the uterus, in cases of Fallopian impregnation, Bischoff combats, by observing that so far as has yet been seen, the lining membrane of the Fallopian tube contains no glands by which the formation of a structure corresponding to an ordinary membrana decidua could be effected. A similar view to the above, in regard to the nature of the membrana decidua, has been advocated also by M. Courtz, (*Archives d'Anat. Gén. et de Physiol.*, Sept. 1846,) who considers this structure to be merely a somewhat altered condition of the mucous membrane of the uterus.

A description of the mucous or lining membrane of the uterus, in the unimpregnated state, has been furnished by M. Deschamps. (*Gaz. Méd.*, Aout 15, 29, 1846.†) He states that this membrane, when carefully dissected off, appears as a

* For a full account of Dr. Sharpey's investigations, see Muller's Physiology by Baly, 2d edit., vol. ii., p. 1574.

† In this essay M. Deschamps gives a brief account of the various views which have been entertained by different writers on the nature and purposes of the membrana decidua.

whitish, very delicate, and friable structure; it is continuous above with the membrane lining the Fallopian tubes, and below, at the neck of the uterus, it is united with the mucous membrane of the vagina. He mentions, also, that with a lens he has distinctly observed the free surface of the membrane to be finely villous, owing to the number of minute follicular glands with which it is beset; from the orifices of these he observed a viscid fluid to exude on pressure. This fluid, with which the interior of the uterus is moistened, possesses all the ordinary characters of mucus.—(*Kirke's Report*, in *Ranking's Abstract*, vol. iv.)

ORGANIC CHEMISTRY.

5. *On Creatine and its Office in the Animal Economy—and on Creatinine.* By J. LIEBIG.—(Extract from a letter to Gay-Lussac, read to the French Academy of Sciences, January 18, 1847.)

It has been long known that the flesh of newly killed animals has a distinct acid reaction. Berzelius has ascribed this property to the presence of lactic acid, a statement never yet confirmed. Several chemists have admitted the existence of lactic acid in the urine, in the gastric juice and in the milk, but the tests relied on in this conclusion, are far from being certain evidence. The researches of Liebig were made with the design of removing all uncertainty as to the organic acid which forms a part of the animal organism.

When the flesh of newly killed animals, finely minced, is washed with cold water, a reddish liquid is obtained, which when subjected to a boiling heat, affords a coagulum of albumen, and becomes almost entirely colourless. The limpid liquor thus obtained, almost imperceptibly yellowish, has a very decided acid character, and a pleasant, very aromatic soup-taste. When it is neutralized by solution of baryta, phosphate of baryta, and phosphates of magnesia are thrown down, it becomes slightly alkaline, though no baryta remain in the fluid. After the separation of the precipitates, and a proper degree of evaporation, crystals of *Creatine*, the substance found by Chevreul in meat soup, are obtained.

The results of this analysis can leave no doubt of the nature of the non-volatile organic acid existing throughout the animal organism. Thus the acid reaction of the muscles is explained; and now that we know that in a great part of the animal frame there exists an acid liquid, which is separated from an alkaline fluid (the blood and the lymph) merely by very fine membranes, it seems easy to explain several electric phenomena observed on the bodies of dead animals, by Matteucci and other physiologists.

By operating on hundred weights of flesh, Liebig has obtained a quantity of Creatine sufficient to ensure an exact examination.

He thinks his experiments warrant him in concluding that Creatine forms part of the flesh of all classes of animals. He has already determined its presence in beef, veal, mutton, pork, horse-flesh, hare, chicken, and pike. The important discovery of Chevreul, who has described the properties of this substance with much precision, becomes the more interesting, because it cannot be doubted that Creatine performs some indispensable office in the actions of life. It is certain at least, that meat-soup can be replaced neither by gelatine nor any liquid besides, drawn from any other part of the animal body except the muscles. Liebig has found Creatine in the heart of the ox, but not in the brain, the liver, the lung, or the kidney.

Creatine belongs to the klinorhomboidal system of crystallization; it is a neutral body which dissolves in alkaline liquids or weak acids, and may be withdrawn from these again without having undergone any change. But when concentrated acids or caustic alkalis are present, its properties become altered. By strong acids Creatine is transformed into an organic base, having very remarkable properties. The substance combined with the acid is no longer Creatine, and cannot again be transformed into that body; it is a new substance which Liebig proposes to term *Creatinine*, and which, by the agency of the hydrochloric and sulphuric acids, is produced merely by the displacement of four atoms of water.

Creatine contains the elements of glycocolle (the anhydrous product of gelatine),

together with an atom of ammonia; Creatinine, those of caffeine, together with an atom of amidine.

The extracts of all the kinds of flesh on which Liebig has experimented, evaporated to dryness, and calcined at a red heat, leave a white ash which contains nothing but phosphates. The liquids obtained from the muscular substance of the ox and the horse, leave a mixture of alkaline phosphates (of potassa and soda), precipitating the salts of silver yellow, and of pyrophosphates of potassa and of soda, precipitating these white. The muscle of chicken leaves pure pyrophosphates. The relation of the salts of potassa and of soda in the liquids derived from flesh, and in the blood, is very different. For one equivalent of potassa, the blood of the ox contains from 12 to 13 equivalents of soda. This relation is inverse in the watery extract of the flesh of the same animal. The blood of the horse contains for one equivalent of potassa, 3.62 equivalents of soda. For the same quantity of soda, the flesh of the same horse contains 61.9 equivalents of potassa. These relations will lead to some important conclusion; for it is to be remembered, that in the milk it is the salts of potassa which predominate. If a salt of soda (a phosphate of soda) be really indispensably necessary to the constitution of the blood in many animals, it should follow that the addition of chloride of sodium to the food of these animals, is equally necessary and indispensable in all those places, as in many districts of Germany, where the plants of the pasture do not contain phosphate of soda, or salts of soda. It is easily conceived that the chloride of sodium by reciprocal decomposition with the phosphate of potassa (which is the predominant salt in our nutritive grains), should furnish phosphate of soda, and chloride of potassium; and this last salt is never absent in the liquids derived from flesh.—*Gazette Médicale de Paris*, Jan. 23d, 1847.

6. *On the Characters of the Blood in Cancerous Diseases.* By Dr. HELLER.—In a former number of this Journal, (Jan 1847, p. 137.) were published some observations by Dr. Heller, on the chemical and microscopic characters of the blood in cancerous affections of the uterus. The substance of these observations went to show, among other points, that in such diseases there is invariably an absolute and relative increase in the amount of fibrin in the blood, and a considerable diminution in the quantity of blood-corpuscles. Dr. Heller has recently investigated the subject further, with the view of determining whether similar changes in composition are undergone by the blood in cancerous affections of other organs as well as of the uterus. He examined portions of blood drawn from a woman affected with hard cancer of the breast; from another woman who had malignant ulcers on the head and neck, and malignant deposit in various parts of the body as shown after death: and from a man affected with cancer of the lip. The analysis of these three kinds of blood showed that in each case there was a similar increase in the quantity of fibrin, and in a similar diminution in the quantity of blood-corpuscles, as was found to exist in the case of malignant affections of the uterus.

There was an equally close resemblance also in the microscopical characters of the blood in these two sets of cases; with the exception, however, that in the present cases there were observed none of those crystalline shining particles which were described in the former paper. These particles Dr. Heller now believes to be composed of fat. He has found them also in blood drawn from patients suffering from other than these malignant affections of the uterus, especially puerperal phlebitis: with regard to the large colourless cells which he found in the blood both in the present and the former series of cases, and which he formerly regarded as true cancer-cells, he is now disposed to consider these merely as the pale corpuscles of the blood altered by the action of the water employed in the process necessary to demonstrate their existence.—*London Med. Gazette*, May, 1847, from *Heller's Archiv.*, 1846.

MATERIA MEDICA AND PHARMACY.

7. *Acid Nitrate of Mercury*.—Dr. NELIGAN gives the following as the formula for the preparation of this new and useful preparation:—Take of pure mercury, 100 parts; commercial nitric acid, (density about 1380,) 200 parts: dissolve the mercury in the acid with the aid of heat, and evaporate the solution until it is reduced to 225 parts.

“This preparation contains about seventy-one per cent. of nitrate of mercury with an excess of nitric acid. It is a powerful caustic, and is very much employed in the present day on the Continent to destroy malignant ulcerations, particularly when of a cancerous character. It is applied by means of a camel’s hair pencil, and the parts are then covered with lint.”—*Medicines, their Uses, and Mode of Administration, &c.*

8. *Valerianate of Zinc*.—Dr. NELIGAN gives the following account of the mode of preparing, and medical properties of this new remedy.

Preparation.—“Take of the bruised root of valerian, two pounds; water, eight pounds; sulphuric acid, three ounces, one drachm: macerate for two days, and distil until the liquid no longer reddens bibulous paper. Let the distilled liquor be then exposed to the air for a month, at the end of which time, put it into a matrass, with half an ounce of recently precipitated, perfectly pure, hydrated oxide of zinc, and digest for from eight to ten hours on a sand-bath, heated to 176° F., stirring occasionally. Filter the warm liquor, evaporate it to three-fourths of its volume, pour into porcelain capsules, and expose to the heat of a stove until crystals are formed, which are to be dried with filtering paper.—BRUN BUISSON.”

“*Therapeutical Effects*.—Valerianate of zinc is a tonic antispasmodic of much power, and as such is peculiarly adapted for the treatment of neuralgic affections, which are so generally dependent on loss of tone in the system. It has been found especially useful in the treatment of facial neuralgia and of vertigo; but I have seen it prove equally beneficial in most of the Protean forms of hysterical neuralgia. In short, I look on it as one of the most valuable modern additions to the materia medica; and I fully agree with the observations of Devay, that the chemical combination proves much more beneficial than the oil of valerian and oxide of zinc prescribed together.

“*Dose and Mode of Administration*.—The dose of it is from three-fourths of a grain to one grain twice or three times a day; it may be prescribed in the form of pill made with a little mucilage or conserve of red roses, or in solution in orange-flower water, or in distilled water flavoured with syrup of orange-flowers. The compounder must bear in mind that the crystals of valerianate of zinc do not dissolve readily in cold water, floating on the surface in consequence of their lightness; they should therefore be first incorporated with a few drops of water in a mortar.

“*Incompatibles*.—All acids; the soluble carbonates; most metallic salts; and astringent vegetable infusions or decoctions.”—*Ibid.*

9. *Red Pepper*.—The Spanish pepper (*Aji*) is found only on the coast, and in the mild woody regions of Peru.

There are many species of the pepper, (*Capsicum annuum, baccatum, frutescens, &c.*) which are sometimes eaten green, and sometimes dried and pounded. In Peru, the consumption of aji is greater than that of salt, for with two-thirds of the dishes brought to table, more of the former than of the latter is used. It is worthy of remark, that salt diminishes, in a very striking degree, the pungency of the aji, and it is still more remarkable that the use of the latter, which in a manner, may be called a superfluity, has no injurious effects on the digestive organs. If two pods of aji, steeped in warm vinegar, are laid as a sinapism on the skin, in the space of a quarter of an hour the part becomes red, and the pain intolerable; within an hour, the scarf skin will be removed. Yet, I have frequently eaten twelve or fifteen of these pods, without experiencing the least injurious effect. However,

before I accustomed myself to this luxury, it used to affect me with slight symptoms of gastritis.—*Dr. Tschudi's Travels in Peru.*

10. *Rhatany*.—Between the Cordilleras and the Andes, at the height of 12,000 feet above the sea, there are vast tracts of uninhabited table lands. These are called in the Quichua language, the Puna. The aspect is singularly monotonous and dreary. The expansive levels are scantily covered with grasses of a yellowish-brown hue, and are never enlivened by fresh looking verdure. Here and there, at distant intervals, may be seen a few studded Quenua trees, (*Polylepis racemosa*), or large patches of ground covered with the Ratanhia shrub, (*krameria triandria*.)

From the most remote times, the Ratanhia has been employed by the Indians as a medicine. It is one of their favourite remedies against spitting of blood, and dysentery.

Most of the Ratanhia exported to Europe, is obtained in the southern provinces of Peru, particularly in Arica and Islay. The extract which is prepared in Peru, and which was formerly sent in large quantities to Europe, is scarcely an object of traffic. For several years past, no Ratanhia has been shipped from Callao, and but very little from Truxillo.—*Ibid.*

11. *Peruvian Bark*.—In the month of May, the Indians assemble to collect the Peruvian bark, for which purpose, they repair to the extensive Cinchona woods. One of the party climbs a high tree, to obtain, if possible, an uninterrupted view over the forest, and to spy out the *Manchas* or spots, where there are groups of Peruvian Bark trees. The men who thus spy out the trees, are called *Cateadores*, or searchers. It requires great experience to single out, in the dark leaf-covered expanse, the Cinchona groups merely by the particular tint of the foliage, which often differs but very little from that of the surrounding trees. As soon as the Cateador has marked out, and correctly fixed upon the *mancha*, he descends to his companions, and leads them with wonderful precision through the almost impenetrable forest to the group. A hut is immediately built, which serves as a resting-place during night, and is also used for drying and preserving the bark. The tree is felled as near the root as possible, divided into pieces, each from three to four feet long, and with a short curved knife, a longitudinal incision is made in the bark.

After a few days, if the pieces are found to be getting dry, the bark already incised is stripped off in long slips, which are placed in the hut, or in hot weather, laid before it to dry. In many parts, particularly in the central and southern districts of Peru, where the moisture is not very great, the bark is dried in the forest, and the slips are packed in large bundles. In other districts, on the contrary, the bark is rolled up green, and sent to the neighbouring villages, where it is dried. Towards the end of September, the *Cascarilleros** return to their homes.

In the more early periods of South American History, the bark was a principal article of Peruvian commerce. Since the commencement of the present century its value has, however, considerably diminished, chiefly, in consequence of adulterated and inferior kinds, which are supplied from other quarters; perhaps, also, on account of the more frequent use of quinine; for, in the production of the alkaloids, less bark is employed than was formerly used in substance. During the war of Independence, the bark-trade received its death-blow, and for the space of several years, scarcely more than a few hundred weights of bark were exported from Peru. The montanas of Huanuco, which once furnished all the apothecaries of Europe with the “divine medicine,” are beginning again, to yield supplies. From the roots of the felled trees, a vigorous after-growth has commenced. In the montanas of Huamalies, a kind of bark is found, the nature of which is not yet defined by botanists, and from the montanas of Urubamba, comes the highly esteemed *Cascarilla de Cuzco*, which contains an alkaloid, called *cusconin*.† Pos-

* Bark gatherers. The Peruvians called the Bark *Cascarilla*, and they point out the distinctions of a great number of species and varieties.

† From Cuzco, the ancient residence of the Incas. It was discovered by the French chemists, Corriol and Pelletier in the *Cascarillo*, which is shipped in Arica; hence this alkaloid is also called *Aricin*.

sibly the medicinal bark may again become a flourishing branch of trade for Peru, though it can never again recover the importance which was attached to it a century ago.

During my residence in Peru, a plan was in agitation for establishing a quinine manufactory at Huanuco. The plan, if well carried out, would certainly be attended with success.

There is in Bolivia, an establishment of this kind conducted by a Frenchman; but the quinine produced is very impure. The inhabitants of the Peruvian forests drink an infusion of the green bark as a remedy against intermitting fever. I have found it in many cases much more efficacious than the dried kind, for less than half the usual dose produces, in a short time, convalescence, and the patient is secure against returning febrile attacks.—*Ibid.*

12. *Sea-moss as a Bandage for Fractures.*—Cochino is a small island, only a few miles distant from the Island of Chiloe. It has only one landing place and that is rather insecure for boats. The water of the bay is remarkably clear and good; only round the island and along the harbour, it is covered with an immense quantity of sea-moss, which often renders the landing difficult. It frequently happens that commanders of ships wishing to go on board, to make sail during the night, get out of the right course, and instead of going to the ship, steer to Cochino, and get into the moss, where their boats stick fast, till returning day-light enables them to work their way out.

The poor inhabitants boil this sea-moss, and eat it. It is very salt and slimy, and is difficult of digestion. Among the people of Chiloe, this sea-moss occupies an important place in surgery. When a leg or arm is broken, after bringing the bone into the proper position, a broad layer of the moss is bound round the fractured limb. In drying, this slime causes it to adhere to the skin and thus it forms a fast bandage, which cannot be ruffled or shifted. After the lapse of a few weeks, when the bones have become firmly united, the bandage is loosened by being bathed with tepid water, and it is then easily removed. The Indians of Chiloe were acquainted, long before the French surgeons, with the use of the paste bandage.—*Ibid.*

13. *Physiological effects of Ether.*—The effects of the inhalation of ether, and the mode in which they are produced, form the prevailing subject of investigation, and debate at the French Academy of Sciences. Numerous have been the experiments performed upon the lower animals to determine the effects of ether upon the nervous centres, upon the blood, upon the fetus in utero, and also upon the actions of the uterus itself, and lastly, upon some of the animal functions.

The chief experiments touching the action of ether upon the nervous centres are those made by Baron FLOURENS, long celebrated for his researches into the functions of the several segments of the brain and spinal cord, by means of vivisection. From his recent experiments with ether, he concludes that its action upon the nervous centres follows a definite course; that it at first acts on the brain, properly so called, (the cerebral hemispheres,) and disorders the intelligence; in the next place, on the cerebellum, and disorders the equilibrium of the movements; it then acts on the medulla oblongata, extinguishing the principle of sensation and motion; and lastly, on the spinal marrow: and having extended its action thus far, extinguishes life. Baron Flourens also observes that hydrochloric ether produces the same effects as the sulphuric. He also considers the phenomena of etherization to resemble asphyxia. To show this he placed some dogs in a certain confined portion of air, and thus asphyxiated them. He then exposed the spinal marrow, and pinched and pricked its sensory and motor columns, but no sensation was evinced, and there were but a few feeble muscular contractions.

M. Roux, on the contrary, from seeing the effects of ether on those operated on surgically, believes that there is not the sequence in their occurrence taught by Baron Flourens; but that they often occur simultaneously; and very frequently consciousness, a readiness in comprehending questions, and in answering them, by voluntary gestures, remains till the moment complete sensibility sets in. Further, M. Roux would rather compare the phenomena of ether to intoxication than

to asphyxia. M. Roux narrates a case of traumatic tetanus following upon the removal of a testicle. The ether was administered on the fifth day from the accession of the tetanus, and when that had gone on to a great degree, there being trismus and opisthotonos, and the muscles of the abdomen affected, yet the pulse was tolerably full and regular; but the power of swallowing was lost, and the breathing was embarrassed. The ether-vapour soon brought on somnolency, but this was of short duration. At the moment of waking, which took place without agitation, cold water was sprinkled on him. The patient having regained his consciousness, it was thought that there was some movement of the head, and that there was less stiffness in the muscles of the neck. But almost immediately, or at least after a few seconds, the respiration became short and rapid, the pulse enfeebled, and half an hour had hardly passed, when the patient was no more. His death M. Roux believes to have been hastened by several hours or more by the administration of the vapor of the ether.

M. MANDL communicated, in a note, some observations he had made respecting the action of ether on the peristaltic movements of the intestines. Having produced complete insensibility in a dog, he opened the abdomen, when he observed that the peristaltic motion of the intestines had entirely ceased, nor did mechanical irritation reproduce it. The complete state of etherization lasted for ten minutes, when the dog moved, and his respiration became accelerated. He was then killed. Consentaneously with this there was a general tremor, and some contractions of the cervical muscles: besides this, the peristaltic action of the bowels reappeared, although feebly, and continued for some time.

This seems to show that the ganglionic system may be influenced by the ether equally with the cerebro and spinal systems: and it also supports the hypothesis which regards the ganglionic system as independent of the functions of the spinal cord. Indeed, respiration and circulation, which, according to Baron Flourens, depend on the spinal system, continue, whilst the vermicular motions cease entirely.

M. ED. ROBIN states that when ether is inspired in sufficient quantity with atmospheric air, it prevents, in a remarkable manner, the transformation of venous into arterial blood. It so acts, that the red blood, which is the necessary stimulus to the various organs, becomes replaced by venous blood in a great measure, and which produces a stupefying effect. Hence the insensibility and other phenomena observed, where ether is effectual in its operations.

M. Robin would explain why the ether opposes the arterialization of the blood in this manner, both from its preventing the impregnation of the blood by the normal amount of air, and from its being burned by the proportion of oxygen which naturally should serve for the production of hæmatosin.—*Lancet*, April 17, 1847.

14. *Ether Vapour Enemata*.—M. PIROGOFF, Professor of Clinical Surgery in St. Petersburg, has been trying some experiments on the effects produced by the injection of ether vapour into the rectum. Having cleared out the rectum by an enema, M. Pirogoff introduces the ether by means of a catheter attached to a syringe, the latter being enclosed in a vessel of water sufficiently heated to convert the ether during its passage into vapour. M. Pirogoff thinks that the narcotizing effects are produced more speedily, and with much less pain and trouble to the patient. It was found that in from two or four minutes the odour of the vapour was perceptible in the breath; and the usual effect is produced on the patient in from three to five minutes. The quantity of ether used in each experiment has varied from half an ounce to two ounces. No injurious symptoms have followed its use in this way, and the most troublesome operations have been performed with great facility.—*Gazette Médicale de Paris*, May 8th, 1847.

M. Velpeau claims for M. Roux, the credit of having first made this observation. M. PARCHAPPE, of Rouen, has since then repeated the experiments on dogs, and has ascertained that when fluid ether was injected in large doses into the intestines, death was rapidly produced; but when the vapour only was introduced into the rectum and colon by means of an appropriate instrument, insensibility was occasioned in a period of time varying between four and ten minutes, with as great perfection as after inspiration into the respiratory organs.

15. *Comparative Utility of the Bromide and Iodide of Potassium, in the treatment of secondary and tertiary forms of Syphilis.* By JOHN EGAN, M. D. (*Dublin Med. Press*, May 19th, 1847.)—The high price which iodine has attained, has induced many practitioners to seek a less costly substitute, and bromine has been recommended for that purpose, and said to possess analogous properties. Dr. EGAN, Surgeon to the Westmoreland Lock Hospital, has experimented pretty largely with this latter article, and in a paper read before the Surgical Society of Ireland, 1st May last, has given the results of his investigations, which by no means confirm the promises held out in its favour.

"To form," says Dr. E., "anything like a correct estimate of its effects, I selected for trial patients similarly affected with those whom I had been accustomed to treat with the iodide of potassium, and have drawn up a statistical table of the results, which has enabled me to institute a comparison between the two modes of treatment. The varieties of disease which I have arranged into four classes were as follows:—

"1st. The eruptive form, comprising the papular, rupial, and scaly varieties.

"2d. Affections of the throat, comprising increased vascularity, ulceration at back of pharynx, and excavated ulcer of the tonsil.

"3d. Osteocopic pains.

"4th. Ulcers of legs.

"In the first or eruptive class there were eighteen cases of the papular variety, of which a cure was accomplished in fourteen after a protracted period. In the remaining four it appeared to exert no effect, and the iodide was eventually substituted.

"In the two cases of rupia, one patient died, worn out by frequent epileptic attacks, in whom the bromide had been used with little benefit for six weeks. In the other, no perceptible alteration was manifested in the symptoms which presented.

"In the scaly variety it failed in one; the other recovered after a lengthened period, desquamation appearing to be the result more of time than the operation of medicine.

"In the second class, consisting of affections of the throat, its use was attended with success in two cases of increased vascularity in which it was employed: on one case of excavated ulcer of the tonsil (the only one from the rarity of this form of disease in which I had an opportunity of testing its effects.) it produced no beneficial result; and out of six cases of ulceration of the pharynx, its protracted use was only productive of advantage in three.

"In eighteen cases of syphilitic pains, success followed in fourteen instances; in the remaining four the iodide was resorted to, to effect a cure. During its administration in this form of the disease, I was frequently obliged to have recourse to anodynes, in order to render the patient insensible to pain, over which for a considerable period it appeared to exert no salutary influence.

"In the fourth class, comprising ulcers of the lower extremities, which might be more properly termed syphilitic cachexia, it produced a beneficial effect in two, but failed in three. The minimum dose employed in these several instances was five grains, the maximum ten, three times a day, beyond which I found it impossible to push it; the vehicle selected for its exhibition was water, with the addition of a little simple syrup.

"In taking a retrospective view, extending over a period of four years, of the cases of secondary and tertiary syphilis treated with the iodide of potassium, and those just detailed in which the bromide was substituted, I think the former line of treatment must strongly recommend itself to every impartial mind for the following reasons:—

"First. The iodide exerts in the majority of instances an instantaneous, decided, and always a beneficial action, contrasted with the bromide, whose effects are slow, unsatisfactory, and frequently unsuccessful.

"Secondly. The iodide seems to act favourably, not only upon the disease for which it is prescribed, but also upon the constitution in general, by increasing the appetite, improving the powers of digestion, thereby enabling the patient to gain flesh while under its influence, whilst the bromide not unfrequently produces nausea, impairs the appetite, and deranges the digestive organs.

"And lastly, every form of secondary and tertiary syphilis (with the exception of iritis) is amenable to the action of the iodide, whilst that of the bromide is extremely circumscribed. A very general impression prevails among the profession, that in order to obtain favourable results from the exhibition of the iodide of potassium, it is requisite to administer it in large doses. From the experience which I have had in its employment in the Lock Hospital, I should say that far more desirable consequences are likely to ensue from moderate than excessive doses; it has seldom occurred that every wished-for indication was not fulfilled by five-grain doses, and in no instance did it appear necessary to increase it further than ten grains thrice a day.

"The vehicle most commonly selected for the exhibition of the iodide of potassium, which, by the majority of writers, is considered materially to assist its therapeutic qualities, is some preparation of sarsaparilla, usually the compound decoction. From repeated experiment, I feel convinced that the beneficial effects of the iodide are in no way assisted by these preparations, as to the utility of which, either directly or indirectly, reasonable doubts may be entertained.

Dr. Stapleton confirmed Dr. Egans' views, and stated, that in comparison with the iodide of potassium, he had found the bromide almost inert.

Dr. Geoghegan has used the bromide pretty extensively, and also was led to a nearly similar estimate of its inefficacy. In some rupial affections, however, he had found it decidedly advantageous; and in venereal rheumatism, also, it had been extremely serviceable; but in most other respects its action was probably inferior to that of the hydriodate.

16. *Substitute for the Vapour of Ether to annul sensation during operations.* By Dr. DAURIOL.—At midsummer, when vegetation is at its height, solanum nigrum, hyoseyamus niger, cicuta minor, datura stramonium, lactuca virosa, are gathered, and a sponge is plunged in their juice freshly expressed. The sponge is then dried in the sun, the process of dipping and drying is repeated two or three times, and the sponge is then laid up in a dry place.

When the sponge is required for use, it is soaked for a short time in hot water; afterwards it is placed under the nose of the person to be operated upon, who is quickly plunged into sleep, more or less deep, according to the susceptibility of his nervous system. The operation may then be proceeded with without any fear that the patient has any sensation of pain. He is readily aroused from the stupor by a rag dipped in vinegar, and placed to his nose.

M. Dauriol records five cases in which he has successfully employed this means of bringing about insensibility during operations.—*Lancet*, May 22, from *Journal de Toulouse*.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

17. *On the Causes of Cyanosis.* By NORMAN CHEVERS, M.D. (*London Med. Gaz.*, March, 1847.)—[We invite attention to the following remarks on the causes of cyanosis, extracted from a valuable and elaborate paper by Dr. Chevers, entitled, "A Collection of Facts, Illustrative of the Morbid Conditions of the Pulmonary Artery, as bearing upon the treatment of Cardiac and Pulmonary Diseases." It will be perceived that the results of his investigations are confirmatory of the views constantly advocated in this Journal, as to the cause of cyanosis, and that the author pays a deserved compliment to the valuable paper of Dr. Moreton Stillé, published in our number for July, 1844.]

The malformations to which the heart is liable usually consist of lesions, which are not inconsistent with the prolongation of intra-uterine life,* but which are calculated to produce very serious embarrassment when respiration commences, and when the alterations naturally affected after birth in the circulatory apparatus begin to be established.

* There are some exceptions to this rule, but they do not appear to be of frequent occurrence.

The paroxysms of suffocative dyspnœa, the lividity of the surface, and all the other distressing symptoms which constitute the leading features of cyanosis, were formerly attributed solely to the admixture of venous with arterial blood through the abnormal cardiac apertures which are usually discovered in these cases, and to the consequent diffusion of a dark and vitiated fluid through every part of the arterial system; but this opinion has been in great measure abandoned since the facts have been established that the symptoms in question may be present in cases where no abnormal communication whatever exists between the cavities of the heart, as well as in instances where it is utterly impossible that the smallest quantity of venous blood could have entered the arterial system: while on the other hand, the symptoms of *morbus cæruleus* are not by any means necessary attendants either of patency of the cardiac septa or of permanence of the arterial duct.

The opinion at present adopted by many pathologists with regard to the cause of the symptoms of *morbus cæruleus* is, that they depend entirely upon delay to the passage of the blood through the lungs, resulting from the presence of a fixed impediment to the circulation.

Morgagni appears to have been the first writer who attributed the intense lividity of cyanosis to obstruction in the trunk of the pulmonary artery. Louis ascribed this symptom to some obstacle to the circulation of the blood through the veins; and MM. Bertin and Berard coincide in believing that the blue appearance of the surface in those affected with abnormal apertures in the cardiac septa depends on the stasis of the blood in the right cavities of the heart, and upon the consequent difficulty with which the venous blood circulates; and, though it be complicated almost always with the mixture of the two kinds of blood, still it is not produced by this mixture. The opinion that cyanosis is exclusively due to the circulation of venous blood through the arterial system, has been satisfactorily disproved by Dr. Stillé,* who adduces ample evidence in proof of the conclusions, (1) that cyanosis may exist without admixture of the blood; (2) that there is not always a proportion between cyanosis and the degree in which the blood is mixed; (3) that complete admixture of the blood may take place without cyanosis; and (4) that cyanosis depends upon congestion of the general venous system from obstruction in the right side of the heart or in the pulmonary artery, impeding the return of its blood to the lungs.†

The results of my own investigations are almost entirely confirmatory of Dr. Stillé's inferences. Cases of cyanosis will very rarely occur in which the morbid anatomist will fail to discover some organic cause which acts virtually as an impediment to the pulmonary circulation. Dr. Stillé has, perhaps, referred somewhat too exclusively to the right side of the heart and the pulmonary artery as the seats of the mechanical obstacle to the circulation in these cases, for it will occasionally, though rarely, be found that the physical impediment to the circulation exists in the pulmonary tissue, or is even external to the lungs, as in Dr. Marcet's well-known case;‡ and, in some few instances, the cause of obstruction is situated either in the left heart or in the aorta. Still, in every case of cyanosis, there will be found to exist some cause or other which tends essentially to prevent the free and complete circulation of the blood through the lungs, to retard its passage through the venous system, and, consequently, to render the process of its arterialization slow and incomplete §

* In a valuable paper on Cyanosis, in the *American Journal of the Med. Sciences*, vol. viii. p. 25: 1844.

† In 54 out of 62 cases of cyanosis analyzed by Dr. Stillé, the pulmonary artery was either contracted, obstructed, or impervious. In the remaining 8, the conditions presented by this vessel were fully capable of producing great venous congestion.

‡ *Edinburgh Med. and Surg. Journal*, vol. i. p. 412.

§ As a general rule, the heart's action is greatly accelerated in cases of cyanosis depending upon contraction of the pulmonary orifice, and upon various other kinds of cardiac malformation: an arrangement by which the smallness of the quantity of blood which passes through the lungs, and becomes oxygenized there, is, in some measure, compensated by the rapidity of its transit. Still, in the majority of cases, this adaptation is not sufficiently complete, either to prevent great delay to the circulation through the right cavities of the heart, or to produce the oxygenization of the entire volume of the circulating fluid so rapidly or so effectually as is usual.

Dr. Stillé has also argued that obstruction to the pulmonary artery is never found without the concurrence of cyanosis. This is perfectly true as regards most of the cases of congenital narrowing of this vessel, but it does not hold good in all; for instance, where congenital imperfection of the pulmonary valves does not become seriously obstructive until late in life, the symptoms which it produces are not necessarily those of cyanosis;* and I shall hereafter have to cite an instance in which extreme narrowing of the pulmonary orifice, the result of endocarditis occurring at the adult period, was not attended with the slightest appearance of lividity of the surface: in fact, it appears that, for the complete establishment of that generally dilated condition of the entire venous system which attends cyanosis, the obstruction to the circulation must have been present either at or before birth, when the capillary vessels are naturally more capacious than they are in the adult, or it must become confirmed previously to the full development of the body, while the entire vascular system is pliant and dilatable, and is still capable of readily adapting itself to permanent changes in the circulation.

It is, of course, well known that various kinds of obstructive disease of the heart and lungs, occurring in adult life, are liable to produce extreme internal venous congestion and considerable lividity of the surface; but I am not acquainted with any instance in which an impediment of this kind, coming into operation subsequently to the age of twenty-five years, has produced that general and intense blueness of the entire surface which forms the characteristic feature of true cyanosis depending upon congenital malformation of the heart.

In extreme cases of original defect of the cardiac apparatus, such as those in which the ascending pulmonary trunk is obliterated or absent, the cyanosis appears to be due less to the circuitousness of the course by which the lungs are supplied with blood, than to the unnatural narrowness of the pulmonary vessels,† which are almost invariably far less capacious than in the ordinary condition; hence the pulmonary veins and left auricle are usually more or less contracted in these cases, while the lungs are either badly developed and imperfectly expanded, or present the evidences of chronic impediment in the dilated condition of their tubes.

There are still a few pathologists who adhere to the old opinion that cyanosis mainly depends upon the circulation of carbonized blood through the arterial system, insisting upon the fact that, in the great majority of cases of *morbus cæruleus*, the septa of the heart are more or less deficient. As I have already stated, it is now established that cyanosis may exist quite independently of imperfection of the cardiac partitions, or of admixture of the venous and arterial blood; still, I apprehend that M. Berard and Dr. Stillé have argued somewhat too exclusively in maintaining that admixture of the two currents has no influence whatever in producing cyanosis, as it appears by no means unreasonable to conclude that, in extreme cases of this kind, where the impediment to the pulmonary circulation is great, and where a large quantity of venous blood evidently passes into the aorta at every systole of the ventricles, the discoloration of the surface, and especially the lividity of the mucous membranes, which is so frequently observed in these cases, is, in part, at least, due to the dark hue and impure condition of the arterial blood. Admitting this, it must be borne in mind that the principal reason why cyanosis is generally present in cases of extensive communication between the cavities of the heart, will be found in the fact that a cause of obstruction which is capable of preventing the natural closure of the septa will rarely fail to occasion

* In the cases of a man, *ætat.* 44, related by Dr. Craigie, and of a woman, *ætat.* 63, detailed by Dr. Fallot (cited at pp. 749-50 of this paper), the pulmonary valves were found united into a thickened ring: in the one case, capable of admitting the end of the little finger; and in the other, merely allowing the passage of a goosequill. There were evidences of very considerable impediment to the circulation in both of these cases, but there does not appear to have been any cyanosis in either.

† Some of the cases in which the heart has been found situated below the diaphragm, prove that, where its canal is free, great deviation in the course of the pulmonary artery is not a necessary cause of dangerous impediment to the circulation, and is not the main cause of dyspnoea and cyanosis in extreme cases of malformation.

permanent and severe impediment to the circulation. Where an abnormal opening is discovered in the cardiac apparatus of one who has only lately become cyanosed, or where such an aperture presents traces of recent enlargement, it must not be at once concluded that the presence or augmentation of this communication has occasioned the cyanosis; but the first cause of the disease must be sought for, and this will generally be discovered in the form of some manifest impediment to the circulation which has determined the patency of the opening from birth, and which, having become recently aggravated, has produced the cyanosis at the same time that it has increased the size of the abnormal foramen.

Dr. Meigs adheres to the doctrine that persistence of the foramen ovale is the cause of cyanosis in infants. He observes, that, "as the occlusion of the foramen ovale is prevented by the torrent of blood flowing from the inferior vena cava, raising and keeping raised the interauricular valve, which is thin and floating, it occurred to him to place the cyanosed child on the *right* side, with the head and trunk somewhat raised, so that the interauricular septum should be maintained horizontal, and the blood contained in the left auricle should press with its whole weight on the closed valve. He has frequently seen the blue colour disappear at the very instant the infant was placed in this position, proving that the oxygenating blood only entered the arteries." Dr. Meigs adds, that he has thus saved the lives of fifty or sixty children in a hundred; whereas, as is well known, all the other means hitherto tried have failed.*

Successful as this application of Dr. Meigs' theory has evidently proved, it is certain that his explanation of the fact is by no means demonstrative. So far from patency of the foramen ovale being an essential concomitant of the blue disease, it is well known that, in a very considerable proportion of instances of cyanosis, the auricular septum is perfectly closed; and two cases are upon record† in which cyanosis was distinctly attributable to closure *ante partum* of the foramen of Botal. Wherever this communication remains too long open in a child, there must exist some cause, either of obstruction to the circulation, or of over-distension of the heart, to prevent its closure; and it is to that cause, and not simply to the patency of the auricular septum, that the cyanosis is due; otherwise it is clear that every infant would remain cyanosed until the termination of the usual period at which the foramen becomes naturally closed, and every individual whose auricular septum remained imperfect would be the subject of morbus cœruleus,—neither of which circumstances is found to obtain. The position of the body recommended by Dr. Meigs is, however, well calculated to relieve those paroxysms from which the subjects of congenital heart disease suffer, as it places nearly the whole of the voluntary muscles in a state of relaxation, thereby rendering the circulation through the extreme vessels as free as possible, and (what is of still more importance) as it facilitates the supply of arterial blood to the lungs and to the brain.

Much unnecessary discussion has been expended upon the question, whether, in cases of septal deficiency, admixture of the venous with the arterial blood occurs constantly, or only as the result of occasional causes of impediment to the pulmonary or systemic circulation. In by far the larger proportion of instances of extensive congenital malformation of the heart, and certainly in all those cases where direct communication between the cavities or arteries exists as the result of a permanently obstructed state of any of the cardiac orifices or vessels, admixture of the two currents of blood is a matter of necessary occurrence—the sole means by which the circulation is maintained at all; and here the state of the parts shows at a glance in which direction the diverted current has been accustomed to pass. Thus, in cases of transposition of the aorta and pulmonary artery, where the ventricular septum and foramen ovale remain pervious, it is evident that blood must be continually passing directly from the right to the left ventricle, and from the left to the right auricle. In other instances, where the orifice of the pulmonary artery is closed, and the aorta arises from the right ventricle, it is apparent that the contents of the left cavities can only reach the aorta by passing from left to right through the aperture in the septum, which is always provided

* Report of the Academy of Sciences, Paris, June 2d, 1845, and Dublin Med. Press, vol. xiv. p. 18.

† Cases by Vieussens and Mr. Ebenezer Smith, p. 967.

in these cases. So, also, in the majority of instances where the foramen ovale remains open, but protected by an efficient valve, it is clear that blood has traversed the aperture only from right to left. But in many cases of congenital malformation of the left cavities of the heart, it is evident that the current through the foramen has always been from left to right. In cases of patency of the ductus arteriosus, associated with contraction of the pulmonary orifice, the lungs, of course, receive some portion of their supply of blood through the duct from the aorta; but, where there exists a contracted or obliterated state of the aorta below the origin of the left subclavian, it not unfrequently happens that a considerable stream of blood is regularly conveyed by the duct from the pulmonary artery into the aorta. In the larger proportion of these cases it is impossible that the direction of the current should be permanently reversed; the foramen ovale is generally defended on one side by a more or less efficient valvular apparatus, and an analogous arrangement has occasionally been developed in patency of the ventricular septum and arterial duct.*

It has been argued by M. Cloquet and Dr. Willis, that when the right and left cavities of the heart are of equal and proportionate strength, no admixture of the arterial and venous blood will occur during their contractions, even although there may exist free communication between the vessels, or through the septa. A few cases have been observed which go far to substantiate the general correctness of this doctrine; but the instances of extensive malformation of the heart are so few in which the two sets of cavities are exactly proportioned to each other, or in which the whole of the cardiac outlets are perfectly free from obstruction, that the rule is by no means one that admits of being either extensively or frequently applied.

It is now allowed by the majority of pathologists that, in itself, patency of the foramen ovale (where the opening, although free, is guarded by an efficient valve), is by no means necessarily attended with cyanosis; and it is probable that, where this exists as the principal defect in the cardiac apparatus, the passage of blood through the aperture is ordinarily by no means large, and that the transit of a full stream from one auricle to the other may be merely an occasional occurrence for the purpose of relieving distension under circumstances of accidental engorgement or obstruction. Still, it is doubtful whether we can fully admit the opinion of Bichat and Louis, that, "in examples of septal deficiency, or at least in cases of open foramen ovale, no admixture of venous with arterial blood occurs except under circumstances of obstruction;" for, as we have already seen, these deficiencies are seldom, if ever, present where there is not also discoverable some cause of permanent impediment to the circulation, which probably at all times occasions a certain degree of comminglement of the currents, although that mixture may not be sufficient to produce serious vitiation of the arterial blood. It is generally found that, when the subjects of the minor degrees of septal deficiency become affected either with pulmonary disease, or with any causes of delay to the systemic circulation, the dyspnœa and lividity of the countenance are greater, and the consummation of the fatal issue is usually more rapid than might have been expected from the extent of the recent pulmonary disease, or from the severity of the other superadded causes of obstruction, had these existed alone—facts which go far to corroborate the belief, that in cases of permanence of the septal openings there generally exists some fixed impediment to the circulation, although that impediment may not be sufficient to produce any visible ill consequences while the heart is tranquil, and the lungs remain free from congestion or other superadded lesion.

It is a demonstrable fact, that there may constantly occur considerable commixture of venous with arterial blood, and yet the individuals may be well nourished and active, and may arrive at maturity without ordinarily presenting sufficient blue-ness of the surface to attract the attention even of a medical man.

In other instances of this kind the patients may continue for many years to enjoy tolerable health, being only occasionally liable to more or less lividity of the surface, either with or without a certain amount of dyspnœa, occurring in consequence of extraordinary exertion, repletion, or transient causes of pulmonary ob-

* See cases observed by Richerand, p. 1087, and by the author, p. 1090.

struction. Here the intensity of the cyanosis can never be taken as an indication of the degree of abnormal communication which exists between the cavities of the heart. Louis has very justly remarked, that "the change of colour is never found to be in proportion to the freedom of the communication;"—for it is, of course, evident that, wherever obstruction of the outlets exists, the more freely the cavities communicate the less will the circulation be impeded.

In either of the above sets of cases the symptoms of morbus cæruleus may become permanently developed in their greatest intensity whenever additional and permanent obstruction occurs to the passage of the blood through the lungs, or immediately the muscular power of the heart becomes seriously impaired. Instances of considerable malformation of the heart occasionally occur in which cyanosis does not appear until the age of puberty, and others have been observed where the lividity of the surface, which had occasionally presented itself from birth, did not become permanent until a rather advanced period of life. In the former of this class of instances the increased impediment is probably due to a want of that development of the pulmonary apparatus which usually takes place at the approach of adult age; in the others it may be traced to additional narrowing or other consequences of acquired disease in the malformed structures, causes which are probably further aggravated by plethora, and by a certain amount of deterioration of the lungs.

Allusion has been already made to the influence of contraction of the foramen ovale and arterial duct in producing the first symptoms of morbus cæruleus in children who are the subjects of congenital cardiac defect; it does not usually appear that such defect necessarily interferes with the health of the infant so long as its system is freely supplied with placental blood; but, so soon as respiration and the organic changes which accompany the commencement of that process become established, the malformed heart fails to perform with facility functions for which its structure very imperfectly adapts it, and the evidences of severe obstruction are quickly developed; these are, in all probability, also aggravated by the increased bulk of the fluids, which is produced when the process of assimilation commences. The opinion advanced by M. Billard, that a perfectly oxygenated blood is not necessary to the new-born fœtus, taken in conjunction with the fact that the infant's body has usually a slightly livid appearance until the funis is secured and respiration is fully established, has been regarded as a sufficient explanation of the circumstance that several hours or days frequently elapse after birth before the symptoms of the blue disease present themselves in those children whose hearts are structurally imperfect. I am not, however, aware of any fact which proves that the blood supplied to the fœtus during intra-uterine life is less completely oxygenized than that which circulates through the arteries of the mother; and it is evident that the slight discoloration of the surface alluded to above is merely the transient result of the embarrassment and delay which the circulation necessarily sustains at the time when the infant is gasping in its first efforts to inspire.

18. *Detection of Sugar in the Expectoration of Patients affected with Diabetes.*—Dr. FRANCIS presented to the Manchester Pathological Society, Feb. 4th, 1847, a specimen of sugar which he had obtained, a few days previously, from the expectoration of a man the subject of diabetes mellitus.

The patient, aged 25, for upwards of a year suffering the ordinary symptoms of this disease, and at present much wasted in flesh, had, during the last six months, shown signs of advancing pulmonary phthisis. The expectoration latterly had amounted to little less than 24 ounces daily, and, on the day which furnished the specimen submitted to examination, had even exceeded that quantity. It was composed of an abundant white, frothy, tenacious mucus, holding in suspension little rounded masses of opaque yellow material.

In order to the detection of sugar, the expectoration was, first of all, treated freely with strong alcohol, which coagulated much of the albuminous matters. Distilled water was then added, and, after agitation and digestion for a short time, the whole was thrown upon a filter, and a clear watery fluid readily passed through.

A small portion of this fluid reduced the protoxide of copper when tested after

the manner recommended by Trommer, and another portion underwent fermentation over mercury.

The remainder was evaporated in a water-bath to dryness, the residue broken up into fragments, and digested for several hours in alcohol, which was then filtered. The alcoholic solution thus obtained was of a yellowish tint, clear, and decidedly sweet to the taste. On evaporation, it left the considerable quantity of sugar now produced to the Society, and which will be found partly crystalline, of a rich sienna brown colour, strong honey-like odour, and intensely sweet taste.

A fluidounce of the expectoration, after dilution with water, yielded by fermentation a trifle more than $2\frac{1}{2}$ cubic inches of carbonic acid, which would be equivalent to $2\frac{1}{2}$ grains of sugar, or 50 grains to the imperial pint.

The urine passed at the time of the examination contained sugar; its specific gravity was 1032, and its average standard for some days had been about 1035. The quantity passed was much less than formerly.

Dr. Francis had detailed at length the account of the process he had used, because, so far as he knew, the presence of sugar in the expectoration of diabetes had not previously been sought; at any rate, he could find no allusion to the subject in the Sydenham Society's edition of Simon's Animal Chemistry, which, with the notes of its accomplished editor, may be assumed to have brought our knowledge in such matters up to the present time.

In addition to the above case, he had, within the last two days, had the opportunity of examining the expectoration of another man who was under treatment two years ago with diabetes, and who, in addition to this, is now far advanced in phthisis. Here the expectoration was more scanty, and consisted of purulent matter, rendered tenacious by an admixture of rust-coloured secretion from a little local pneumonia. In this case an ounce of sputa contained so much as about seven grains of sugar.

It might be found, he thought, when closer attention came to be given to the subject, that there were other organs than the kidneys habitually playing an active part in the removal of the sugar which was accumulating in the blood during the progress of diabetes. There were, at least, some grounds for believing such might be the case from the results just detailed, and, if so, the quantity of sugar escaping in the urine could not be viewed as an absolutely safe index to the quantity formed in the system, unless taken in conjunction with other means of its elimination.

The cases might further be looked upon as furnishing an argument, if further evidence upon the subject were necessary, that the kidneys play no part in the formation, but merely in the separation from the blood, of the sugar.—*London Med. Gazette*, Feb., 1847.

19. *On the Pathological Anatomy of Perichondritis Laryngea.* By J. H. JANSEN.—This rare laryngeal affection has been found to follow external injury, to arise idiopathically as a catarrho-rheumatic affection, or more frequently secondarily, along with or after small-pox, typhus, the mercurial cachexia, and secondary syphilis. The author narrates two cases. One a young man, who had been already five weeks under treatment for typhus abdominalis, was seized during convalescence with a laryngeal affection, and died suffocated four days afterwards. The other, an individual aged twenty-four, affected with confluent small-pox, also died suffocated, after suffering eleven days from a similar complaint, which arose during the crusting of the pustules. The morbid appearances found were, an abscess, surrounding on all sides a considerable extent of the posterior portion of the cricoid cartilage; superficial softening and diminished size of the cartilages, along with thickening or serous infiltration in the neighbourhood of the abscess; the mucous membrane was, excepting œdema, normal without a trace of ulceration. Our author, considering that normal cartilage is incapable of inflammation, looks upon this as a true inflammation of the perichondrium, with deposition of the plastic exudation upon the surface next the cartilage; this collects under the perichondrium, separating it from the cartilage, and, passing gradually into pus, forms an abscess, whose walls are formed by the thickened and infiltrated (with serum) cellular tissue. The alterations in the cartilage are produced, 1st, in a mechanical manner; the exudation, by separating it from the perichondrium, putting it beyond

the pale of the circulation and consequent nutrition, &c.: 2d. In a chemical manner, by the action of the pus upon the necrosed cartilage; the perforation of the cartilage, and separation of it into several pieces, proceeds not, as *Albers* supposes, from a chondritis, but is a consequence of the different thickness of the cartilage at different points, and of the unequal extension of the inflammation. The extension of the abscess on the external surface of the cartilage cannot be explained by *Cruveilhier's* theory of an inflammation of the submucous cellular tissue, which is also much more readily infiltrated with pus than an abscess formed in it. The cricoid cartilage is most frequently affected; more rarely the thyroid, partially or entirely, alone or in unison with the former; and the disease has been only twice narrated as occurring in the arytenoid perichondrium. Though highly dangerous when following exhausting diseases, as an idiopathic affection or consequence of injury, the prognosis need not be so unfavourable, the swelling and œdema causing the principal danger, viz., death from suffocation, which might be obviated by a timely performance of tracheotomy.—*Monthly Journal of Med. Science*, Feb., 1847, from *Holländische Beiträge zu den Anatomischen und Physiologischen Wissenschaften*.

20. *On some Appearances in cases of so called Purulent Poisoning of the Blood.* By Dr. HERTZVELD, of Zwolle.—Organic chemistry and the microscope are daily working such reformations in the healing art, that attention is again becoming drawn to the long well known influence of the fluids of the body—more especially the blood—upon the organism, and to their influence in the production of disease. In the hey-day of solidism, and especially when the doctrines of Broussais were at their height, every disease was localized; and in order to account for the general symptoms, and the appearance of disease in distant organs, refuge was had to secondary irritation, sympathy by means of the nerves or similarity of tissue, contiguity, vicarious functions, and the like. At present, a more simple, and in many cases a more certain explanation of the general symptoms of disease, is found in an affection of the blood, and besides this, the many changes, primary or secondary, to which this fluid itself may become subject, and which were unknown to the solidists.

Among those diseased processes which, at present, it is conjectured may owe their origin to a changed state of the blood, belongs the so called purulent poisoning (eitervergiftung), or as it is named by Engel, purulent fermentation (eitergährung,) a condition of the blood in which it generally acquires a greater degree of fluidity. This condition is found, indeed, in other diseased processes; but purulent fermentation is specially characterized by the formation of large deposits of pus in various parts of the body; it may be in the parenchymatous organs or in the extremities: and this is not unfrequently accompanied with a greater or less effusion of fetid ichor. This diseased process, which may assume various forms, and to which the most opposite names have been given, such as phlebitis, absorption of pus, malignant inflammation, gangrenous erysipelas, diffuse inflammation, abscess by metastasis, &c., is further specially characterized by the circumstance that it always arises under the influence of some infecting matter, be it miasma or contagion, which obtains admission through an open wound or a mucous membrane, and which sometimes appears to be connected with a mucous or pus-like secretion. The nature of this infecting matter is still unknown; but it is probable that, like the purulent poisoning itself, it may vary. In the absence of analysis, no very minute distinction can be made of these various conditions. Meantime, however, the varying degree of severity under which the diseased processes connected with these conditions originate, and the diversity of causes which call them forth, would all seem to indicate some degree of difference in the infecting matter. Thus we see it following wounds in the corrupted air of an hospital, profuse suppurations after amputation, wounds received in dissection, and handling diseased cattle (pustula maligna, the glanders of horses), and in all these cases it is modified, not only in its course, but in its appearances. Nay, what is more, all acute exanthemata appear to originate in a somewhat analogous process; but their pathological products are developed on the skin or mucous membranes, whilst in the other case they are deposited in the parenchymatous organs, or cellular tissue. In many of these, however,—variola for example,—the contagion is connected

with a purulent-like secretion, which, by re-absorption, produces the same disease in other organisms. The analogy might be pushed further, and a chronic dyscrasia, as for instance, syphilis, might be placed under the same category, by assuming that in the former an acute, and in the latter a chronic, deposition of the poison from the blood takes place; and thus we obtain a connection between diseased processes, which, in their form, course and consequences, are very different, as between erysipelas and typhus, metritis septica, and ulcus phagedænicum; a connection which only shows the more strongly how manifold are the diseased changes to which the blood is subject. These diseased processes may all be reduced to two principal heads; 1st, a diseased state of the blending of the elements of the blood, which originates from the peculiar constitution of the body, and only under the direct influence of external forces, as in the scorbutic, chlorotic, carcinomatous, tuberculous, and scrofulous diatheses, &c. (dyscrasia); 2d, such as are called forth under the influence of contagion, to which the above named processes of purulent poisoning belong (poisoning of the blood).

It is well known that it has long been a subject of dispute, as to how, in cases of purulent poisoning, the poison is taken up into the blood. The doctrine of phlebitis, as set forth by Dance and Cruveilhier, is a step in the direction of the new hæmato-pathology, from the old theories of inflammation. Experience has abundantly proved that this doctrine is quite untenable, and that true cases of purulent poisoning may occur without a trace of inflammation in the veins. This has been proved beyond doubt, by Kennedy, who, among others, gives two cases by Duacan, in which diffuse inflammation followed bleeding at the arm, and in which, on dissection, the veins were found perfectly healthy. The author himself met with a case in 1840, under the care of Professor Tilanus, in which, in like manner, no trace of inflammation was found in the veins after death.

The case was the following—"A man aged forty, received a small wound on the left elbow joint. On his admission into hospital, the left arm was found greatly swollen, hot, with diffused redness, and the epidermis raised into a blister; there was also headache, foul tongue, small pulse, low state of temperature of the skin, disturbed vision, subsultus tendinum, evident disturbance of the cerebral functions, delirium and coma, alternating with consciousness. Next day gangrenous vesicles, yielding a fetid odour, were found on the arm. The gangrene soon spread, and adynamic symptoms set in, such as sunk visage, cold skin, dry tongue and lips, diarrhœa, muttering delirium, &c. The spreading of the gangrene appeared, at one time, as if about to stop, but his hope soon vanished, and the patient sank on the fourteenth day.

"On dissection, the arachnoid was found covered with fibrinous exudation; the brain, lungs, and intestines were healthy. The cellular tissue under the dead skin was found in a state of suppuration, with necrosis of the aponeuroses; the deeper cellular tissue, with the vessels and nerves, were matted together into a firm mass. The brachial artery and vein were dissected out of it, and on being laid open, their internal coats were found perfectly healthy."

But it may be affirmed that there is positive proof, by experiments on animals, to show that purulent poisoning of the blood may originate from suppurating phlebitis. This the author does not deny, but he believes that in such cases, a destructive or putrefactive process (the name is of no consequence, seeing we are ignorant of its essential nature), arises from the mixture of the pus and blood, by which a deleterious matter is formed, that exercises a poisonous influence over the whole mass of the blood. The author then comes to the views entertained by others regarding purulent poisoning. The destructive action does not arise from the mechanical admixture of the pus or its elements with the blood, but in the development of a substance hitherto unknown, and which has its origin in the degeneration of the pus itself. The strongest objections against purulent poisoning are; 1st. The pus cells are too large to pass through the pores of the vessels; 2d. The disappearance of large abscesses without any prejudicial effect on the organism.

It is, indeed, almost incredible that acute physiologists should ever have entertained in sober seriousness the crude views stated in the first objection. Must not every solid substance, ere it is fitted for absorption, be reduced to the fluid

state? And do we not see the same appearances under other pathological circumstances? When new articular surfaces are formed in old luxations, are the bony cells, as such, taken up into the vascular system? or, when a necrosed portion of bone is separated from the sound one? The other view, as stated in the second objection, is a confirmation of our author's views in regard to purulent poisoning; for what occurs in the disappearance of such an abscess? As Vogel has justly stated in his pathological anatomy, it is the serum of the pus which suddenly disappears; the pus corpuscles, on the other hand, may be found in an unchanged state for a long period. It is only after a considerable time that they disappear by absorption, *and only after they have been reduced to the fluid state.*

The same thing takes place in purulent poisoning, but with this difference, that in the first case, the serum abstracted from the influence of the air, retains its natural properties; whereas, in the other, in consequence of the effect of the air, or some other miasma, a substance is generated, by some species of chemical process, which acts prejudicially on the whole mass of the blood. Far from ascribing this to the solid parts of the pus, he believes it to originate from the ichor, the remarkable fluidity of which sufficiently distinguishes it from laudable pus; just as in the same way the poisonous properties of small-pox matter reside, more evidently in the lymph than in the pus of the pustule.

When a mixture of pus and blood takes place in the vessels, either in consequence of a wound, or phlebitis suppuratoria, the pus cells act merely as a mechanical hinderance, and produce stagnation in the circulation of the blood; a stagnation, certainly, which, were it carried to any great extent, would produce death as suddenly as the entrance of air into the veins, or the injection of oil, as in the well-known experiments of Magendie; but those appearances, to which the name of purulent poisoning has been given, can only take place after the pus has previously undergone some change in its properties by means of a chemical process.

According to our author, therefore, Engel is entirely wrong in assuming that in order to produce purulent poisoning, contact of the pus with the blood is a necessary condition; and he is also wrong in ascribing to the pus cells a solvent power on the blood. Indeed, the very proofs which he brings forward in favour of those diseased processes, ranged by him in the category of purulent fermentation, testify against him; and the objections stated by him to the opposite views are easily overcome. 1st. "*All croupy exudations (the name given by Rokitansky to membranous exudation, the result of inflammation), says Engel, undergo the process of cure by the pus-like solution of the coagulable lymph, and its effect on the blood is prevented in consequence of its being separated from it by the medium of an uninjured skin.*" To this our author replies, the effect on the blood is prevented merely because the exudation being abstracted from the influence of the air, is not subject to any disturbing chemical processes. And the proof of this, he states, is to be found in the operation of empyema, the unsuccessful result of which arises from the admission of air, and its action on the exudation, which cannot be prevented. 2d. "*Inflammation of the lymphatic vessels, accompanied with purulent exudation, seldom exercises any prejudicial effect upon the blood, and for the reason, that the pus being isolated in the lymphatic system, no actual contact can take place.*" As already stated, our author conceives there are several varieties of blood poisoning, and that these differ materially in their appearances, course, and results. Syphilis may be placed in this category; for here a dyscrasia of the blood is produced by the inoculation of a contagion grafted on the pus. Is there any isolation of the pus in the lymphatic system in this case? Is it not the case, on the contrary, that a syphilitic bubo always precedes the constitutional affection? 3d. "*Chronic abscesses, which from impenetrability of the skin, or other causes, are shut up as in a sac, exercise no prejudicial influence on the blood.*" Of course, because the air has no means of penetrating to the pus, so long as they remain unopened; and hence the great caution exercised in opening chronic abscesses. 4th. "*Phlebitis, or umbilical arteritis, in new-born children, produces no change in the blood, and yet pus is formed both in the arteries and veins; there is nothing, moreover, in the locality to prevent its being taken into the mass of the blood.*" The fact is correct; but why is the pus not taken up? Because coagulation of the blood is produced by the solid parts of the pus, and hence a complete separation from the rest of the vascular system.

The same thing occurs in true phlebitis. But all this, according to our author, is just a proof that the effect of the blood corpuscles is to cause stagnation. Were the pus cells themselves the cause of purulent poisoning, a diseased process allowed by Engel himself, to produce great fluidity of the blood, how could any line of demarkation take place, or how can we explain the origin of the stagnation?

Besides all this, there are many diseased processes, justly placed by Engel under the category of purulent putrefaction, in which there is no proof that an actual contact between the pus and blood actually takes place, but, on the contrary, there are many probabilities against it. Among other examples, the author adduces that of glanders in the human subject, in all the cases of which hitherto detailed, the symptoms of purulent putrefaction were present, on which account, Engel, true to his system, holds the communication of it from animals to men as exceedingly doubtful. But this has been completely proved by the most careful observation, and as no direct mixture of the pus and blood can in this case be admitted, it hence follows that the infecting principle in purulent poisoning does certainly not reside in the pus cells. The same thing holds good in the puerperal processes, diffuse inflammation of the cellular tissue, &c., in all of which cases not only is there no direct proof of the admixture of the pus and blood, but, on the contrary, it is in most cases highly improbable. From all that precedes, the author conceives himself entitled to draw the following conclusions:—

I. Every case of purulent poisoning is not produced by phlebitis.

II. Purulent poisoning arises from a product acting prejudicially on the blood, and which product is the result of a chemical process in the pus.

III. This deleterious product is grafted not on the pus cells, but in the pus serum.

IV. In order to produce purulent poisoning direct admixture of the pus and blood is not essential.

V. When, in consequence of phlebitis, a mixture of the blood and pus occurs, there ensue, as a result of the mechanical properties of the pus corpuscles, stagnation of the circulation, and coagulation of the blood; the true purulent poisoning only arises when the pus has undergone the chemical changes above alluded to.—*Monthly Journal of Med. Sciences, from Van Deens Archiv.*, 1. 5.

21. *Phlegmasia Dolens in a Male*.—M. BLANDIN, in the *Journal de Médecine et Chirurgie* for November last, relates a case of spontaneous phlebitis occurring in a labourer, exactly resembling the *Phlegmasia alba dolens* of pregnant females. The patient was admitted into the Hotel Dieu, complaining of pain and weakness in the right leg. He stated that, after more than usually severe work, he experienced an extraordinary sensation in the right leg. The veins were swollen, and he had difficulty in moving the limb. The application of cupping-glasses had produced no relief. Before admission he had suffered severe pain throughout the limb, and for some days previously the whole extremity had been much swollen, the swelling having commenced in the calf of the leg, and extended gradually upwards. The lower part of the abdomen as well was now œdematous, and tender on pressure, without any redness of the integuments. Leeches and cataplasms were applied, the horizontal posture was maintained, and mild purgatives administered. Afterwards mercurial frictions were made use of. The patient made a speedy recovery.

M. Blandin remarks, that cases of spontaneous phlebitis never present the severity or acuteness of the same disease proceeding from traumatic lesions, the former generally terminating in adhesion, while in traumatic phlebitis the formation of false membranes does not occur, but suppuration takes place, the purulent matter being absorbed and circulated through the vascular system, and producing purulent infection.

22. *On the Local Treatment of Amenorrhœa*. By A. LEGRAND.—The author commences this short memoir with a deserved compliment to the practitioner, whoever he was, who first thought of the application of nitrate of silver in the treatment of affections of the mucous membranes, characterized by a diminution of their vitality, a relaxation of their texture, an increase and vitiation of their secretion; for, he

says, this idea has been the happy foundation of many safe uses and unexpected benefits of this remedy. He refers in particular to its unexampled success in virulent ophthalmia, whether sporadic or epidemic, and in urethral discharges, and remarking on the varieties in the strength of the applications employed by different authorities, he condemns the excessive quantities recommended by some, as a practice eminently disturbing. Noticing the easy transition from the use of nitrate of silver in the urethra to the use of it in the vagina, he remarks on the anatomical causes of the less efficacy of the form of solution in the latter case, as having led first to the direct cauterization of the canal, either general or partial, by the aid of the speculum, with the nitrate in the solid state; secondly, to the use of rolls of lint, bougies, and the like, smeared with an ointment of nitrate of silver.

To the use of the nitrate in the solid state he objects, on the ground of its severity and other inconveniences, and rejecting the supposed advantage of the tampon for keeping apart the inflamed opposite surfaces of the canal, he objects to it, besides, as a foreign body, the presence of which must irritate. Our author's method in opposition to these, is the simple application of an ointment of the nitrate, which may penetrate between the rugæ of the canal. This ointment is composed of one part of nitrate of silver, dissolved in twenty-five parts of water, and then thoroughly mixed with seventy-five parts of cerate. From two to three grammes (from thirty to forty-five grains) of this cerate are put into a muslin-bag, open enough in texture to permit the cerate to pass through under a slight pressure. The fore-finger is inserted into this bag up to the first phalanx, the bag being fastened around it, and the finger so armed is introduced into the vagina, and is carried over its whole extent, so that every sinuosity of the canal and of the vulva may be freely anointed with the contents of the bag. Our author occasionally employs the ointment of somewhat greater strength. He finds it of the greatest service in various affections of the vagina of an inflammatory character, accompanied with discharges, care being first taken to remove as far as possible those determinate causes with which the affection may be connected. Other remedies may be applied to the vagina by the same method—thus, Dr. Legrand has used successfully by this method an ointment containing tannin in relaxation of the vagina.—*Month. Jour. Med. Sci.*, Feb. 1847, from *Gazette Médicale de Paris*, January 2d, 1847.

23. *Chenopodium in Amenorrhœa*.—Mr. HOULTON states that he has had frequent opportunities of watching the medicinal action of the *Chenopodium olidum*, and is perfectly convinced that it is a very safe and important remedy, in many cases in which the catamenial function is not duly performed. He employs the spontaneously evaporated extract in the form of pills, from five to ten grains, night and morning. In general, if the pills are taken regularly for a fortnight previously to the expected return, the beneficial effect of the medicine is manifested; should this not be the case, he repeats them in the same manner,—that is, for a fortnight previously to the expected change. He does not advise this medicine to be given in all cases in which the catamenial flux is suspended, for there are many cases in which attention to the general health will effect a cure, which it would be superfluous to detail. It is in those cases in which the uterus itself requires medicinal aid that the peculiar benefit of the *chenopodium* is shown.—*Medical Times*.

24. *Alum in Pertussis*.—Dr. DAVIES highly extols the efficacy of alum in pertussis. In the late edition of Underwood's Treatise, edited by him, he says, "After a long trial, I am disposed to attach more importance to alum, as a remedy in whooping cough, than to any other form of tonic or antispasmodic. I have often been surprised at the speed with which it arrests the severe spasmodic fits of coughing; it seems equally applicable to all ages, and almost to all conditions of the patient. I was formerly in the habit of taking much pains to select a certain period of the illness for its administration, and of waiting until the cough had existed at least three weeks, taking care that the bowels were open, the patient free from fever, the air passages perfectly moist, and the disorder free from complication of any bruit. A continued observation of the remedy, however, has induced me to be less cautious, and I am disposed to think, that a very large amount of collateral annoyances will subside under its use. The fittest state for its administration will be a moist condition of the air-passages, and freedom from cerebral

congestion; but an opposite condition would not preclude its use, should this state not have yielded to other remedies. It generally keeps the bowels in proper order, no aperient being required during its use. The dose for an infant is two grains three times daily; and to older children, four, five, and up to ten or twelve grains may be given, mixed with *Syrupus Rhæados* and water. It is seldom disliked."

25. *Bismuth in Diarrhœa*.—RAYER uses the tris-nitrate of bismuth in the diarrhœa of phthisical patients, and in that which occurs in typhus, with great success. It is also much employed in the diarrhœa of infancy.—*Gazette des Hôpitaux*, September, 1845.

26. *On Tubercular Pericarditis with Pathological and Practical Remarks*. By GEORGE BURROWS, M. D.—In this interesting paper, read before the Royal Medical and Chirurgical Society, Feb. 23d, 1847, the author, after alluding to the rapid advances made in our knowledge of the diseases of the heart during the past twenty years, refers to the paper of Dr. Taylor, on the Causes of Pericarditis, published in the twenty-eighth volume of the Society's *Transactions*, where that physician assigns rheumatism, granular disease of the kidneys, and extension of inflammation from contiguous parts, as the chief causes of pericarditis. To this opinion the author assents, but invites the attention of the Society to another form of that disease, which he designates tubercular pericarditis. After taking a review of the statements of different pathologists who have described tubercular deposits in the pericardium, more especially of the descriptions of Baillie, Laennec, Andral, Louis, and Rokitsansky, and of the opinion expressed by the latter, that tubercular diseases of the pericardium are the consequence, and not the cause, of chronic inflammation of that membrane, the author proceeds to detail three cases of tubercular pericarditis.

CASE I. A young Italian was admitted into St. Bartholomew's Hospital, labouring under the symptoms of incipient phthisis. After three weeks' residence in the hospital, the appearance of blood in the sputa caused a careful examination of the chest by the stethoscope to be made, when the physical signs of unsuspected pericarditis were detected. The friction-sounds of pericarditis were heard through fifteen consecutive days, and then subsided, leaving no cardiac murmur. At the expiration of two months, a fresh accession of fever, and examination by auscultation indicated the presence of double pleurisy, which continued during nineteen days, when the man died. The post-mortem examination revealed the existence of abundance of effused lymph in the pericardium, of copious serous and fibrinous exudations in either pleura as well as in the peritoneum. Numerous opaque, yellowish tubercles were found disseminated throughout the self-coagulable lymph effused on these membranes. The lungs also contained numerous tubercles in the crude state scattered throughout the different lobes; the bronchial glands and spleen also contained tubercles.

CASE II.—A young man in Milbank Prison, when convalescent from chronic dysentery, was attacked with the symptoms of incipient phthisis, but auscultation detected no signs of extensive tubercular disease. The young man sunk, and upon examination after death, both lungs were found thickly studded with yellow tubercles, varying in size from a millet-seed to a small pea. The pericardium contained a large quantity of firm lymph, intensely stained with blood; and upon separating the layers of lymph towards the base of the heart, several small yellow tubercles were distinctly recognized in those portions which were most carefully examined. A coloured drawing of this heart was exhibited to the Society.

CASE III.—A young man, who had been imprisoned at the Hulks and at Millbank, became the subject of dysentery in the latter prison, from which he was convalescent, when he exhibited the symptoms of phthisis. Upon auscultation, Dr. Baly detected the presence of pericarditis, and he was forthwith removed to St. Bartholomew's Hospital. The physical signs of pericarditis were manifest during twenty consecutive days, and then disappeared, leaving the heart exempt from all murmurs. This young man quitted the hospital, convalescent, a few days after the cessation of the pericarditis; and although his recovery prevented the verification of the diagnosis of pericarditis, still the history of the case, so closely

analogous to that of Case 2, and the absence of the usual causes of pericarditis, induced the author to regard Case 3 as one of tubercular disease of that membrane. The author then points out the class of cases in which this rare affection may be suspected—viz., in those persons, who having been long exposed to the most powerful exciting causes of tubercular cachexia, exhibit symptoms of incipient phthisis; and yet the auscultatory signs of tubercles in the lungs are inconclusive. In such persons, tubercular affections of serous membranes and of the pericardium should be looked for. The author then considers the pathological question, whether the tubercles are to be regarded as the cause or the effect of these chronic inflammations of the pericardium. After quoting the opinions of Laennec, and Rokitsansky, who appear to regard the tubercles as the result of a change taking place in the layers of fibrin, consequent upon acute inflammation, and which tubercles then cause the inflammation to become chronic, the author endeavours to show that it is more in accordance with our present knowledge of the history of tubercle, to suppose the tubercles to be deposited on the pericardium in the first instance; and that these foreign bodies acting as exciting causes of inflammation there as elsewhere, keep up chronic inflammation. A similar train of phenomena may be observed in chronic tubercular peritonitis. The author concludes by pointing out how inapplicable the usual remedies for pericarditis are in the tubercular variety. Large losses of blood, and the lavish use of mercury, should be abstained from; while counter-irritation over the chest, saline diuretics with combinations of iodine, and the speedy removal of the patient from the influence of depressing causes, are the means most likely to arrest the progress of chronic pericarditis produced by the irritation of tubercular deposits.—*Lond. Med. Gaz.*, March, 1847.

27. *Cutaneous Eruptions induced by various Medicinal substances.—Opium.*—The eruptions which in certain individuals follow the use of the preparations of opium are always of an exanthematous nature. In general they consist of red isolated patches not unlike those of measles. This kind of eruption is rare.

The *Solanææ*.—The eruption induced by the ingestion of the preparations of this tribe of plants are also of the order exanthemata, and are as uncommon as those which are the effect of opium. The patches are larger and irregular, resembling scarlatina.

The *Oleo-resins*.—all the Medicinal substances of this class are liable to be followed by cutaneous eruptions, but none so frequently as turpentine and copaiba. The eruption very much resembles that produced by opium and belladonna, being sometimes measly, at other times scarlatinous in its appearance. It is a rare exception to see either vesicles, pustules, or papules.

Cod-liver oil.—This medicine sometimes gives rise to a form of eczema, which appears generally about the fifth day from the commencement of its use; it is, however, rarely observed.

Iodide of potassium.—The eruptions which follow the use of this medicine are far from uniform, sometimes being eczematous, at others pustular, as in acne. It sometimes happens that the skin escapes the action of the medicine, and that the mucous membranes are attacked instead; in such cases we observe coryza and conjunctivitis, which cease as soon as its use is suspended, but which will not yield to topical treatment as long as the medicine is persisted in.

The discrimination of the cutaneous affections which are induced by different medicinal substances taken internally, is of no slight practical importance; we have seen ignorance of these characters and causes give rise to very unpleasant mistakes.—*Annuaire de Thérapeutique*, 1847.

28. *Effects of sudden changes of Temperature.*—"It is not unusual," says VON LIT-TROW, (*Miscellaneous Writings*, Edited by his son: Stuttgart, 1846,) "for sitting rooms [in Russia] to be heated to 30° Reaumur (99° Fahrenheit), whilst the temperature out of doors is as many degrees below Zero. Now, as the inmates of such rooms must leave them more or less every day, and expose themselves to the open air, they must undergo a sudden change of temperature of fully 60° (135° Fahrenheit), which not even a Russian constitution could endure, unless peculiar precautions were taken. The middle-aged foreigner who settles in these regions, and chooses to adhere to the customs of his own warmer country, gene-

rally succumbs quickly to the severity of the climate. In Perm, for instance, a town that is south of the latitude of St. Petersburg, I was told by a young German, who had been settled there for six years, that not one of his countrymen, whom he had found there on his arrival, still survived. 'Within these six years,' he said, 'I have followed more than twenty German fathers of families to the grave, and I should probably myself have had a like fate, if I had not arrived here in my twenty-third year, at an age when the constitution is sufficiently plastic to accommodate itself to new outward circumstances. The Russians,' he added, 'know this very well, and they look on every foreigner who comes among them in his fortieth year, as certainly destined to die soon. Thus, the parents all die prematurely, but their children in general thrive very well.' The frequent and sudden exchange of a hot room for the cold outer air produces a malady peculiar to those northern regions, and which is the more appalling since it must be remedied on the instant, otherwise it will be rapidly fatal, or will end in a very distressing chronic malady. The strongest and healthiest man, if he puts one foot out of the room, or if the door or window is opened for a moment, is often seized with an uneasy sensation, which is immediately followed by an extreme disturbance of his whole system, the consequence of the sudden suppression of perspiration. A great weariness in the limbs, a feeling in the extremities as if they would drop off, piercing headache, and a burning in the eyes, are the first symptoms of the disorder, and if they are not immediately remedied, the case is soon beyond curing. The grand requisite is to restore the suppressed perspiration. To this end the invalid is put into bed without delay, with his clothes on, heaps of blankets and furs are laid over him, and he is made to drink as much very hot tea as he can swallow. The patient has no sooner gulped this down, and drawn in his head under the clothes, than a copious perspiration breaks out over his whole body, and all the alarming symptoms vanish as rapidly as they first appeared. The rest of the company, who have meanwhile seated themselves again round the table, are not at all surprised to find the sick man sticking his head out from under his mountain of furs in the next quarter of an hour, and chatting with them as gaily as if nothing had happened; whereas to any one not familiar with such cases, he would have seemed a few minutes before but a lost man. The coverings are gradually taken off, and the patient is often quite well again the same evening, and as hearty as ever.

"But the case is very different with those who are not thus relieved on the instant. If they are not dead by the next day, which most commonly happens, they remained crippled in every joint, and die a painful, lingering death. These people may at once be recognised, not only by their crippled limbs, but by a peculiar cachectic expression of countenance. Their answer, when asked what is the matter with them, is—*Prostudilsa*, 'I have had a chill,' a word that smites with as awful a sound on the Russian ear as ever *δαυρος* did on that of a Greek of old.

"Whoever is not capable of being instantly thrown into a copious perspiration by a few cups of hot drink, will, if he takes my advice, keep away from those regions. But how is it that there are no such unfortunate persons among the Russians? I never met with any. Just as many persons can fall asleep whenever they like, so all Russians can perspire at will. Give them a cup of tea, a warm cloak, and a thick cap, and the thing is done. They may thank themselves for this precious peculiarity, for such it really is. Their frequent use of hot baths keeps the pores of their skin open, and their copious draughts of warm tea increase the excreting power of the skin, and adapt it to resist the influences of their climate,—influences which, but for these counteracting causes, would perhaps be more pernicious to the population of Russia than even the plague is to the people of the East."—*Westminster and Foreign Review*.

29. *On Cynanche Laryngæa, or Acute Œdematous Inflammation of the Larynx.* By GEO. BUDD, M. D.—The chief object of the author of this paper, read before the Royal Medical and Chirurgical Society, March 9th, 1847, is to show that the disease known to practitioners under the above title is really erysipelas, commencing in the fauces, or in their neighbourhood; and that it has been generally supposed to be confined to the larynx, and has been termed laryngitis, in consequence of its often proving fatal before the erysipelas has had time to spread far from this part.

In support of this view, he relates five fatal cases of this disease that have re-

cently occurred in London: one in his own practice in King's College Hospital; three in the Dreadnaught, the particulars of which were given him by Mr. Hudson; and one in Charing Cross Hospital, under the care of Mr. Avery, the particulars of which have been published in the medical journals.

These cases, the author observes, were clearly examples of the same disease; but they did not all begin exactly in the same manner. In three, the inflammation commenced in the fauces; in one, it commenced in the parotid gland; and in one, the first appearance of it was an erysipelatous blush at the angle of the lower jaw.

In all the cases the inflammation soon spread to the glottis, and produced there the same effects—namely, redness and great thickness of the epiglottis, and of the lips of the glottis, with effusion of sero-purulent fluid in the submucous cellular tissue—to such a degree as, in three of the cases, to produce almost sudden closure of the glottis, and consequent suffocation.

In three of the cases in which death occurred within a few hours after the inflammation of the glottis came on, and within twenty-four or thirty-six hours from the commencement of the malady, the inflammation had not time to spread far, and the air-tubes, and lungs, and other organs, were sound.

In the other cases, which were more protracted, the inflammation had spread down the air-tubes, and there were marks of inflammation in the chest, and an infiltration of a sero-purulent fluid in the loose cellular tissue of the neck.

The occasional connection of laryngitis with erysipelas was noticed by Dr. Cheyne in his article on laryngitis in the *Cyclopædia of Practical Medicine*; and again by Mr. Wood, in a paper published in the seventeenth volume of the *Medico-Chirurgical Transactions*. The first person to treat expressly of it was Mr. Ryland, of Birmingham, in his work "*On Diseases of the Larynx*."

The author cites the facts related by Mr. Ryland, and observes that they prove conclusively that inflammation of the larynx, causing great swelling of the lips of the glottis, and infiltration of fluid in the submucous cellular tissue, and thus leading to speedy suffocation, occasionally results from the poison of erysipelas.

He considers the following circumstances favour the opinion he has expressed as to the nature of the disease:—That the inflammation spreads in the same mode as in erysipelas of the skin, presenting the deep redness and swelling, and infiltration of a serous or sero-purulent fluid, which occur in that disease; that it is more fatal than ordinary laryngitis; and that it occurs most frequently amongst the inmates of hospitals in which erysipelas prevails, and amongst such of them as are peculiarly liable to erysipelas—viz., convalescent from continued fever or eruptive fevers, and those labouring under secondary syphilitic ulcers.

The author concludes with suggestions respecting the treatment of the disease, and some general remarks on erysipelas.

Mr. Holmes Coote said that last summer two cases of the disease under discussion occurred in St. Bartholomew's Hospital. One patient was just recovering from a large ulcer in the leg, when he was seized with great difficulty of breathing; leeches were applied to the throat, and antimony and other powerful remedies freely employed, but the difficulty increased, and laryngotomy was resorted to. The patient, however, sank, and, after death, the cellular tissue around the glottis was found in a state of inflammation; pus was infiltrated beneath the tissues, some portions of which were mortified. In another case, a patient, having a slight wound of the hand, and diseased wrist-joint, was suddenly seized, when recovering, with the same symptoms as those observed in the former case. The larynx was opened early, but without benefit. The disease seemed not only a consecutive one, but it appeared that it might come on at any time, as the result of some atmospheric influence. It did not seem to be the result of any particular disease, as there was none in the hospital at that time. With respect to treatment, he believed that in the more formidable cases we had no means of arresting its progress. He had no faith in local applications to the epiglottis, and thought that the treatment recommended by Dr. Budd was the most likely to be successful.

Mr. Busk related two cases which had occurred in the Seaman's Hospital, for the purpose of recommending a mode of treatment, which in these instances had been found quite successful. This treatment consisted in making a great number of minute punctures on the back of the tongue, the uvula, and pharynx, with a

sharp-pointed bistoury. The operation was repeated every half hour for two or three hours. The parts should be afterwards gargled with warm water; there was a great discharge of serum, and the relief was sudden and decided. He attributed the recovery in the two cases to which he had alluded, to this plan of treatment. It was only carrying out the principle recommended some years since by Sir H. Dobson, to be followed in cases of erysipelas affecting external parts. He, Mr. Busk, believed that this proceeding would often prevent the necessity of laryngotomy.—*London Medical Gazette*, March 19, 1847.

30. *Tincture of Iodine in obstinate Intermittent Fevers*.—Dr. SEGUIN of Alby, in a short paper in the *Journal des Connaissances Médicales pratiques*, December 1846, states that he has found the tincture of iodine a very valuable and effectual remedy in cases of intermittent fever, which have resisted quinine and other antiperiodics. It is not equally effectual, he says, in recent cases. He gives it in doses of 30 drops in a little sweetened water, in three doses during the apyrexia, and gradually increases the dose to 40, 50 and even 60 drops.

31. *Mediastinitis*. By Dr. C. PFEUFER.—A young man, aged 18, of scrofulous habit, was admitted into the Bamberg hospital, with symptoms of hypertrophy of the heart, and a violent pain in the left breast, accompanied by cough and febrile symptoms, which disappeared on venesection, leaving merely a feeling of fulness and constriction. After eight days, a fluctuating swelling arose under the muscles above and at the side of the sternum. It was opened, giving exit to a large quantity of yellow matter; in the incision, a fistulous opening, three inches deep, was seen to lead between the cartilages of the third and fourth rib, down to the pericardium; a second one, between the cartilages of the second and third ribs, two inches long, conducted to a bare rough portion of the sternum. This speedily enlarged, so that in a few days the finger could be passed in, and the corpus was separated from the manubrium sterni, by the force of the heart's action. After the opening of the abscess, so much pus was passed with the urine, as to occupy three inches in a vessel eight inches high, with relief to the patient. This ceased in a few days, and was followed by pain over the tuberosity of the tibia, and œdema of the left foot and leg. The pain was relieved by leeches. The œdema extended as high as the middle of the thigh, and was relieved by punctures and a spica bandage; but this had to be removed, on account of a recurrence of the above mentioned pain. A fluctuating swelling had now formed, on opening which, a quantity of thin ichorous matter escaped, and $1\frac{1}{2}$ inch of the tibia was found to be bare of periosteum, and in a state of commencing necrosis. Whilst this proceeded, the abscess in the breast ceased for a few days to secrete pus, and the carious portion of the sternum began to granulate. A return of the secretion here was followed by a drying up of the sore on the tibia, which was of a lively red, and put on the appearance of hospital gangrene only the day before death, which followed forty-five days after admission. On the previous day, a new fistula appeared between the fourth and fifth ribs, on the left side.

On dissection, the carious portion of the sternum was found covered with a cartilaginous pseudo-membrane, $\frac{1}{4}$ inch thick. A cylindrical cyst, 1 inch in diameter, and with walls $\frac{1}{4}$ inch thick, was found under the sternum, extending from the beginning of the manubrium to the insertion of the cartilage of the seventh. Into this the three above mentioned fistulæ opened. The lungs were healthy; the left ventricle hypertrophied; the right dilated. The left kidney contained, in its inferior half, isolated purulent cysts and numerous purulent points.

This case is interesting, from the twice occurring alternations of the purulent discharge between the carious sternum and tibia, and in relation to the still disputed points of absorption of pus and purulent diathesis. Here we have evidently to do with a general evil. Had absorption taken place, the characteristic fever would certainly have been present, together with the symptoms of pulmonary affection during life, and abscess in them after death. It is also instructive, from the source of the pus in the urine having been found in the kidney.—*Monthly Journ. Med. Sci.*, Feb. 1847, from *Zeitschrift für Rationelle Medizin*.

32. *A Simple Remedy for Cramps in the Lower Extremities*.—By Dr. S. A. BARDSLEY,

of Manchester. Having myself been for many years a martyr almost every night to this torturing malady, and having tried in vain many of the "thousand and one" remedies usually prescribed for relief, I was at length led to reflect upon a fact which had hitherto escaped my attention, viz., while sleeping in a chair, with my lower limbs, if not touching the floor, yet so depending as to form an inclined plane with the whole of my frame, that I was in this position never disturbed by cramps; and upon inquiry, I found other sufferers from habitual cramps were under the same predicament. These facts, in connection with some physiological considerations, induced me to put into practice the following plan, which has proved decidedly successful. My plan is to sleep upon an inclined plane, which is effected by taking care that the bed or mattress should incline twelve inches from the upper to the lower part of the bed; and for this purpose the lower feet were cut down so as to form this inclination. I will now state two facts, which are sufficient tests that neither the imagination nor intemperate diet were the causes of my habitual cramps. 1st. That after my trial of the inclined plane for seven consecutive nights with complete success, the housemaid, unknown to me, had raised my bed to its usual horizontal level, and, unconscious of the change, I went to sleep, when shortly afterwards the cramps were so severe as to compel me twice to alarm the family by my cries and moans; and it was not until I arose in the morning that I discovered the change in the form of my bed. 2d. The other test is the one which I made six weeks ago. After very spare diet of twenty-four hours, I replaced my bed from the inclined to a horizontal position, when shortly after I awoke with dreadful cramps—so violent in the muscles of the thigh and legs as to require two persons to hold the limbs down in order to apply friction, with stimulants, both external and internal; indeed, the paroxysm was so severe and continued as to be accompanied with sickness and faintness. I deem it necessary to give a caution to sufferers from cramps, that the disorder is almost always connected with a weak or imperfect state of the digestive organs, and therefore, although the method now stated for relief will allow the sufferer several luxuries hitherto forbidden, yet there must be limits placed to such indulgences if he expects to pass the nights entirely free from his malady.—*Lond. Med. Gaz.*, May 1847.

33. *Rigidity of the Arch of the Aorta.*—Dr. BELLINGHAM has called attention to a condition of the arch of the aorta which, he states, is often mistaken for regurgitant disease of the aortic valve, viz., rigidity and inelasticity, with more or less weakness of the parietes of the vessels, with or without dilatation. His views of the production of dilatation of the aorta are, that it is due to regurgitation of the blood from the carotid arteries into the inelastic vessel, and not, as is commonly supposed, to the distensive force of the left ventricle, acting upon the diseased arterial coats. The paper, which is one of much interest, terminates in the following *resumé*:—

1stly. That under certain circumstances, the blood regurgitates into the arch of the aorta, from the carotid and subclavian arteries during the diastole of the ventricles.

2dly. That regurgitation into the arch of the aorta occurs, whenever the coats of this vessel have become rigid and inelastic from previous disease.

3dly. That regurgitation into the arch of the aorta from the carotid and subclavian arteries, is capable of developing a sound, which has a great resemblance to the *second sound of the heart*, and is audible at the same period of the heart's action.

4thly. That a rigid and inelastic condition of the coats of the arch of the aorta, combined with roughness of the interior of the vessel, and slight increase of its calibre, is characterized by certain well-marked physical signs, which will enable it in the majority of cases to be readily diagnosed.

5thly. That the physical signs of this morbid condition of the arch of the aorta, resemble those of valvular disease, and have probably often been mistaken for it.

6thly. That the form of valvular disease with which it is most liable to be confounded, is a state of the semilunar valves of the aorta permitting regurgitation, which it resembles in a murmur accompanying the second sound of the heart, in the jarring pulse, and in the visible pulsation in the arteries; symptoms which heretofore were supposed to be pathognomonic of regurgitations through the aortic orifice.

7thly. That the morbid deposits which occur in the arch of the aorta, are not

the result of inflammatory action either of an acute or chronic character; neither can they be considered as the result of the natural degeneration which the tissues undergo in advanced life; but that they ought to be ranked among adventitious deposits.

8thly. That dilatation of the arch of the aorta is more frequently the result of regurgitation into this vessel from the large branches which come off from it, than of the increased force with which the blood is propelled by the left ventricle, or than of any impediment to its passage through the remote or terminal branches of the aorta.

9thly. That our knowledge of the fact, that regurgitation into the arch of the aorta occurs in cases where this vessel has become inelastic from disease, enables us to explain the cause of the *second sound* heard in cases of aneurism of the arch of the aorta, and to account for the second impulse felt where the aneurism forms a tumour externally.—*Dublin Medical Press*, April, 1847.

SURGERY.

34. *Pathological and Clinical Observations on Cancer.* By J. HUGHES BENNET, M. D. —In this very interesting paper, which was read to the Med. Chirurg. Soc. of Edinburgh, (Feb. 3.) the author confined his observations to the four questions connected with cancer, which more particularly interest the medical practitioner, namely, 1st, Is there any anatomical character which will enable us positively to distinguish a cancerous from any other kind of growth? 2dly, Is there any evidence that cancer is ever spontaneously curable? 3dly, What means do we possess of diagnosing cancerous from other tumours or growths in the living subject? and, 4thly, What influence should our present knowledge of diagnosis have upon the treatment?

1. *Is there any anatomical character which will enable us positively to distinguish a cancerous from any other kind of growth?* A cancerous growth may contain the following elementary structures:—1. Molecules and granules; 2. Nucleated cells of various shapes; 3. A filamentous or fibrous tissue; 4. A viscous fluid; 5. Blood-vessels; 6. Fatty matter; 7. Pus, and compound granular cells; 8. Black pigmentary matter; 9. Earthy matter. Of these, some are accidental or only occasional, and others essential or invariably present. The essential elements of cancer are, 1st, A fibrous mesh-work or stroma; 2dly, Nucleated cells; 3dly, A viscous fluid in which these float.

The fibrous tissue of cancerous growths exactly resembles that found in lymph, or in the healthy tissues of the economy. It may be formed, either by deposition or by means of cell growth. In the former case, filaments more or less delicate, and closely aggregated, may be seen, crossing each other or running in bundles, forming various kinds of mesh-works in which the cells of cancer are deposited. In the latter case, we can observe fusiform cells splitting up into fibres, and are able to trace their formation from round, oval, or caudate cells, until perfect fibres are formed. These cells, (called by Lebert *fibro-plastic*,) are of a round or oval form, varying in size from the $\frac{1}{100}$ th to $\frac{1}{30}$ th of a millimetre in diameter. Sometimes they possess a distinct nucleus, about the $\frac{1}{30}$ th of a millimetre in diameter; at others, contain only several molecules and granules. Acetic acid causes these bodies to undergo very little change. They become somewhat paler, but there is no marked difference in this respect between the nucleus and cell wall. These cells, in their different stages of development into fibres, have been frequently mistaken for those of cancer;—Müller placed them among cancerous growths; and hence the erroneous opinion, that the caudate or spindle-shaped cell is characteristic of cancer. Fibrous tissue may be arranged so as to form loculi, containing a viscous fluid, with or without cancer cells, constituting the colloid tissue of authors.

The nucleated cells peculiar to cancer vary greatly in shape and size. Sometimes we see nothing but oval bodies about twice the size of a human blood globule, or closely resembling, except in colour, the oval blood corpuscles of the llama or camel. They measure about the $\frac{1}{3}$ th of a millimetre in length, and $\frac{1}{100}$ th or $\frac{1}{20}$ th

of a millimetre in breadth. These oval bodies are the nuclei of cancer cells. Sometimes they exist alone; at others, we may observe, by careful management of the light, a round or oval delicate cell wall, frequently resembling a mere shadowed halo, in the fluid in which it floats. On adding acetic acid to them, we find the cell wall disappear, whilst the nucleus becomes more distinct than formerly. Such is the character of a cancer cell in its young state. At a more advanced period of development, the cell wall is more distinct. The nucleated structure is now round or oval, its medium diameter being about the $\frac{1}{30}$ th of a millimetre, with a round or oval nucleus about the $\frac{1}{70}$ th of a millimetre in diameter. The addition of acetic acid always produces a remarkable change in these bodies, causing the cell wall to become very transparent and faint, and the nucleus to assume an unusual degree of distinctness. Hence, the author considers that Dr. Walshe has committed a fundamental error in the histology of cancer, when he says, p. 33 of his treatise, that "the ultimate microscopical cells of cancer are insoluble in cold and boiling water, and are not seriously affected by acetic acid."

Dr. Bennett minutely described the further growth of these cells, which he illustrated by diagrams, showing how they multiplied from cell rising within cell. It is owing to this cellular structure, that cancer owes the reproductive power which constitutes its malignancy. The cells occur isolated or in groups, surrounded by the other elements of the growth, but more especially by the fibrous tissue.

The third essential element in cancer is a gelatinous fluid. On cutting through a scirrhus tumour, however hard it may be, we may generally succeed in scraping from its surface, a fluid more or less transparent. In soft cancer it is more abundant, and contains the granules and cells previously described. In some forms of cancer, however, it constitutes a very large proportion of the mass, presenting a gelatiniform or mucilaginous appearance, varying in colour from a pearly white to a deep amber, and in consistence, from a slightly viscous fluid, to a firm semi-solid mass. Collections of this kind may occur in loculi formed by fibrous tissue, or in cystic tumours perfectly structureless, or containing only numerous molecules and granules, constituting the simple colloid tissue of Gluge and Lebert. When associated with cancer, however, it contains a greater or less number of the cells previously described, in various stages of their development. In the case just narrated by Dr. Paterson, the gelatinous matter within the loculi of fibrous tissue, contained numerous cancer cells in an advanced stage of development, enclosing secondary and tertiary corpuscles, all of which presented the characteristic reaction on the addition of acetic acid.

It is the relative amount of the three essential elements of cancer, now described, which constitutes its peculiar form. If the fibrous element be in excess, it constitutes scirrhus. If the corpuscles be numerous, encephaloma is produced—and if the fluid abound, and is collected into loculi, we call it colloid cancer. There is no other difference between these three forms than this, and Dr. Bennett expressed his conviction that there was no essential distinction between them. He pointed out, that we frequently find all these forms of cancer in the same tumour, in one place, scirrhus or hard cancer, in another, encephaloma or soft cancer, and in a third, gelatiniform, alveolar, or colloid cancer.

The non-essential elements of cancer, such as blood-vessels, pus, fatty, pigment, and earthy matters, &c., modify the external appearance of the growth in particular cases, but are not constant. Want of time prevented the author from entering into a consideration of these anatomical complications.

At an early period in the study of histology, it was natural to conceive that a certain form of the cell should be thought characteristic of cancerous growths. The observations of Müller led to the belief, that the caudate and spindle-shape of this minute structure was peculiar to them. Hence, we find him confounding certain tumours, long denominated sarcomatous, and which wholly consist of fusiform cells, with cancerous or malignant growths. These, however, have no power of reproduction, and although often associated with cancerous cells, should not be confounded with them. From the results of many examinations, Dr. Bennett was satisfied, that there is no one form of cell which can be considered as at all times characteristic of cancer. The caudate and spindle-shape of these bodies are common to fibrous structures in general, frequently seen in lymph, and espe-

cially, in the exudation forming the granulations on ulcers, recent wounds, vegetations on the endocardium, &c. &c.

The *structure* of the cell, and the action of acetic acid upon it, is much more distinctive. If the corpuscles are in that stage of growth in which they present a distinct nucleus with contained nucleoli, and if on the addition of acetic acid, their external wall be rendered more transparent, whilst the border of the nucleus is apparently thickened, they are highly characteristic of a malignant structure. But even this is not an absolute and invariable mode of distinction; besides, it is only applicable when the cells have arrived at a certain stage of development. Dr. Bennett had frequently seen young epithelial cells, under certain circumstances, present all the characters just mentioned, with the exception of enclosed nucleoli, and undergo the same reaction with acetic acid. This is very apparent in some cases, where effusion has taken place into the lateral ventricles of the brain, when the epithelial cells of the choroid plexus become separated, swell out from endosmosis, assume a globular form, and if young, the cell wall is partially dissolved in acetic acid, whilst the nucleus is unaffected. The same occurs with the epithelium of the bladder. He has found in the bladder, a fluid having all the external appearance of pus, and on examination, shown them to consist of round, oval, and caudate nucleated cells, exactly resembling those found in cancer, and acting with acetic acid in the same manner. Yet the lining membrane of the bladder, the ureters and kidneys, were perfectly healthy. We need not wonder, then, that epithelial cells have frequently been mistaken for those of cancer, even by histologists, and that many growths, consisting of hypertrophy of the epidermis, or epithelium, as in several so-called cases of cancer of the lip, ulcerated warts, excrescences, &c., should have been mistaken for malignant growths.

Dr. Bennett stated that he was not aware of any tissue, in which a fibrous and a cell structure, such as had been described, were combined, and he was, therefore, inclined to think, that whenever we find cells of this kind deposited between the meshes of a filamentous structure, we may be satisfied that cancer is present. If we trust to the form of the cell alone, we may confound epithelial growths with cancer—if we trust to the fibrous elements alone, we may mistake sarcomatous growths for it. But in no case, so far as his experience has yet gone, can the two be associated without the existence of malignant growth. This character, then, he thinks one which will apply to all forms of cancer. In many cases, the form and appearance of the cells, to an experienced eye, will be sufficient, this, more especially, when they are fully developed, and the influence of acetic acid upon them observed. In difficult cases, the conjoined character of the cells and fibres, and their relative position with respect to each other, will enable us to determine the point with more exactitude. To arrive at a knowledge of these facts, however, considerable skill in the manipulation of the microscope is necessary, and a very intimate acquaintance with the healthy and morbid tissues of the body. To distinguish the relative situation of the cells and fibres, especially when mucous membranes are the object of investigation, a section, by means of Valentin's double-bladed knife, is also in most cases essential.

2. *Is there any evidence that cancer is spontaneously curable?* Of the ultimate causes of cancer, or why an exudation thrown out from the vessels should ever undergo the peculiar transformations described, we know nothing. Observation and experience, however, coincide with the modern theory of cell growth, in attributing to it a reproductive power, on which its malignancy and power of spreading from tissue to tissue depends. Is this process ever checked? A general opinion prevails, that cancer is necessarily fatal. Dr. Bennett did not coincide in this opinion, because it was not easy to understand why nature should never cause the degeneration and disappearance of this one particular growth alone, whilst every other tissue and form of cell-life was occasionally abortive.

Trousseau, Hodgkin, Cruveilhier and others, have frequently traced the conversion of scirrhus into ossiform matter, in the lower animals and in man. Dr. Walshe on this subject, observes, "I feel myself justified in affirming, that after careful investigation of the point, that if the bony lamellæ actually continuous with some part of the skeleton, and which formed a marked characteristic of certain cancers connected with osseous structure, be excluded from consideration, the phenomenon in question will be found to be much more written of than observed."

(Treatise, p. 81.) Dr. Bennett stated that he had seen this transformation into calcareous matter in five cases, and presented four preparations to the Society, taken from three of these. The first preparation was a portion of a large soft cancer, lobulated externally, taken from a case of Dr. Paterson's preserved in spirit. A microscopic examination showed it to contain numerous cancer cells, deposited in areolar tissue, combined with an immense number of crystalline masses of phosphate of lime. The second preparation was a dried section of this tumour, the volume of which was only slightly diminished, and seemed to be wholly formed of calcareous matter. The third preparation was a dried portion of intestine, with a mesenteric gland attached, the external portion of which was converted into calcareous matter, where fresh cancerous matter could still be squeezed from its centre, exhibiting the characteristic cell structure, mixed with a quantity of earthy matter. The fourth preparation was a dried portion of mesentery, studded over with enlarged mesenteric glands, completely calcareous, removed from the body of a female who had died from scirrhus and chronic stricture of the pylorus. This series of preparations, Dr. Bennett considered, offered conclusive evidence, that cancer is capable of undergoing the calcareous transformation.

It has been stated, that cancer sometimes becomes transformed into fibrous or fatty tissue, and thus produces cicatrices in organs. It is very difficult to prove such a statement, because if there be no cancerous cells in a fibrous tissue, it is contended that it is not malignant and never has been. On the other hand, if cancer cells be present, it is clear that we have no evidence of degeneration. There can be no doubt, that many organs and tumours are considered cancerous, which are only fibrous. Dr. Bennett had examined many so-called cases of scirrhus of the pylorus, which were only hypertrophy of the muscular and fibrous tissues of the part. He alluded to a case of Dr. Alison's he had examined, in which the coats of the stomach throughout, varied in thickness from an inch to an inch and a half. The viscus was thought by all who saw it to be cancerous, and yet he showed it to consist of nothing but fibrous tissue and fusiform cells. He had also proved many tumours, supposed to be cancerous, to be only fibrous.

Professor Bochdalek of Prague, formerly pathologist to the hospital there, and now Professor of Anatomy in the University, published a memoir in 1845, "On the Healing Process of Cancer in the Liver." He describes the cancer in this organ, as breaking down into a cream-like matter, the fluid parts being absorbed, and the whole shrinking together, forming a puckering on the surface often corresponding to a fibrous mass or a fatty material, in which collapsed cancer cells may yet be detected. In some livers, he has seen these cicatrices in all stages of formation, cancers in some places, and perfect cicatrices in others. In Prague, he tells us there are between 400 and 500 bodies examined annually. Among these, cancer of the liver occurs about 16 or 17 times, and among these, proofs of healing may be observed between 6 and 7. (*Oesterreichische Wochenschrift*, April 26, 1845.)

Dr. Bennett had frequently seen these appearances in the liver, but he had never been able to satisfy himself that they were proofs of cured cancer. There are strong probabilities in its favour, however. Tubercular masses are rare in the liver of adults, and such lesions must depend either upon cancer or upon chronic abscesses. He exhibited to the Society two wet preparations of livers, with puckerings on their surfaces, some corresponding to white fibrous cicatrices, and others to rounded yellow masses, varying in size from a pea to that of a walnut. When recent, these latter were thought to be cancerous by all who saw them, yet a minute examination showed them to be formed principally of fibrous tissue, mixed with irregular fatty particles, and debris of cells, so indeterminate in their character, that their nature could not be ascertained. In some of the cases of Prof. Bochdalek, cancer was associated with these cicatrices, and that cancerous ulcers occasionally cicatrize, is well known to surgeons.

When in Prague last autumn, Dr. Bennett, having been previously acquainted with Professor Bochdalek's memoir, carefully examined the preparations of the lesion described, in the pathological museum of that city. He recognized them to be the same in appearance as those he now presented to the Society. Professor Dlauy, the present pathologist, was so polite as to take the preparations out of their bottles, make fresh incisions into them, and permit Dr. Bennett to examine them microscopically. He found that the cicatrices, though altered by spirit, were

principally composed of fibrous tissue; the nature of the softer matters could not be ascertained. This was no proof of cancer. He was then shown a similar preparation of a liver, together with a stomach taken from the same case, the former having similar puckerings, and the latter a cancerous ulcer of which the individual died. Whether this was a mere coincidence it would be difficult to say. M. Sedillot has lately asserted that cancer cells are occasionally elongated, so as ultimately to form fibres, but it is not certain whether he has clearly distinguished the fibro-plastic element so often present in cancerous tumours, from those of cancer. Dr. Bennett considered, that taking every statement into consideration, it was by no means improbable, that cancer might occasionally degenerate into a fibrous mass, although we still require positive proof of it. At all events, they have convinced him of the necessity of making further researches on this subject.

The same difficulties exist with respect to the supposed degeneration of cancer into fat. Nothing is more common, than to find associated with cancer, a yellowish friable matter, more or less abundant, resembling cream in colour or consistence, or presenting a bright gamboge yellow tint. This, on examination, is found to consist of numerous granules, which disappear on the addition of ether, and refract light, like globules of oil. Whether these granules are elementary nuclei and cells, or whether they are the result of the disintegration of cells previously formed, is unknown.

What means do we possess of diagnosing cancerous from other growths in the living subject? The local symptoms and general signs of cancer, have frequently been found to be insufficient for the purposes of diagnosis, such as the lancinating pains, unequal surface, hardness, elastic feel, softening, ulceration, the surrounding tissue being affected, a general alteration of the constitution, and a tendency to return after excision. All these symptoms have, at various times, been proved to be connected with epidermic, fibrous, fatty, or cystic growths.

In the living subject it is clear, that the anatomical arrangement of the fibrous and cellular elements, observed in morbid specimens, can seldom be seen. We have no opportunity of obtaining a section. Still, there are certain places where the detection of such cells as have been described, exhibiting their peculiar change under the action of acetic acid, will enable us to diagnose a malignant growth with certainty. Over most of the surface generally, for instance, where the diagnosis most concerns the surgeon, a group of such cells cannot leave us in doubt, because the epidermic scales in such cases never resemble them, as they do in internal organs, as the bladder, stomach, or brain. Thus, although anatomically, and in all cases, we cannot depend upon the form or even structure of the cell, as connected with the epidermis alone, we can. Hence, to the surgeon, a minute examination is a more precious means of diagnosis, than to the physician. Various ulcerated and fungoid tumours of the surface may be diagnosed with certainty, from an examination of the cells alone, whilst in fluids discharged from the stomach, bowels, or bladder, this means of diagnosis is not so certain.

Many instances are now on record, where, in doubtful cases, such an examination has determined the nature of the growth. Several have been lately published by M. Sedillot of Strasburgh, and others may be found in the works of Lebert and Vogel. There can be no doubt, that many tumours and ulcerations exist, which, to the naked eye, and according to the ordinary symptoms, resemble cancer, although they are perfectly innocent. To all such growths, Lebert has given the name of *cancroid*. Among them may be placed many so called cancers of the lip, which, on examination, are often found to be fibro-epidermic; many tumours of the breast, which are either fibrous, fibro-epidermic, or cysto-sarcomatous; fungoid swellings of the dura mater; the ordinary fungus of the testicle, which Messrs. Goodsir and Syme have shown to consist of healthy granulations; and probably, the so-called chimney-sweep's cancer of the scrotum. Several instances were referred to, published in the writings of Lebert, Vogel, Syme, and Sedillot.

There were some cases, no doubt, where, after every means of research had been employed, doubt as to the nature of the growth would still exist. All those who contend for the exclusive advantage of any one sign or symptom, must have very limited notions of disease or diagnosis. No one could repudiate the use of the microscope more than the author was disposed to do, as a sole means of diagnosis in any case. But he contended, that this instrument judiciously employed,

is likely to be as useful in the hands of the surgeon, for the diagnosis of cancerous and cancroïd growths, as the stethoscope is in the hands of the physician for the diagnosis of diseases of the chest. Neither instrument should be alone depended on, but conjoined with the history and other symptoms, will lead in many cases, to more correct conclusions than it is possible to arrive at by means of the unaided senses. Dr. Bennett cited a few instances, which had come under his own observation, confirmatory of this statement, and alluded to others brought forward by the writers formerly mentioned. A few dozen cases, however, could not be considered a sufficient basis for this important inquiry. He believed that the whole subject was yet to be worked out, and considered it above all things desirable, that some young surgeon would dedicate his time and energies to the task. No doubt, it was troublesome to be under the necessity of entering into new researches on points which many consider already determined, and where such decided opinions respecting them had been so long held by practitioners. Such, however, were the sacrifices which the progress of medical science required. In the meanwhile, Dr. Bennett invited surgeons to forward him specimens of morbid growths in a fresh state, or to enable him to examine the ulcers, or discharges from malignant and doubtful growths or ulcers. He would make notes of the result, and these, with a short history of the case, might form the groundwork of a more extended series of researches, which would no doubt, before long, lead to some positive result.

4 *What influence should an improved knowledge of the pathology and diagnosis of cancer have upon the treatment?* Most of the practical points connected with the surgical treatment of cancer, were fully discussed in the French Académie de Médecine, in 1844, on the occasion of a paper read by M. Cruveilhier. That eminent pathologist maintained, that surgeons are continually cutting out fibrous tumours from the female breast, which never undergo cancerous transformation, and which, therefore, might be allowed to remain with perfect safety. So far from fibrous growths ever degenerating into cancer, he considers that they indicate a state of constitution altogether incompatible with malignant action, so that in being able to detect them in the breast or uterus, he has confidently assured the patients that they would never be subject to cancer. In support of these statements, he brought forward cases of tumours in these situations, which had existed from ten to thirty years, and cited one exceptional instance, where cancer having attacked a breast already the seat of fibrous tumours, these remained unaffected, while all the rest of the organ was cancerous. He pointed out, that cancer always depended upon a constitutional disorder, that local disease was the effect and not the cause, and to remove the first, whilst the latter was allowed to remain, was an irrational practice.

In these opinions M. Cruveilhier was supported by MM. Velpeau and Jolly. The first maintained, that he could diagnose fibrous, or what he called fibrinous tumours of the mamma, which never degenerated into cancer, although he frequently removed them, to tranquillize the patient, or to get rid of a deformity.

On the other hand, it was contended by most of the practical surgeons of Paris, including the names of Blandin, Gerdy, Roux, Amussat, Berard, and Lisfranc, that it was impossible to diagnose fibrous from cancerous tumours of the breast at an early period; that the former were only an incipient stage of the latter, and consequently, frequently degenerated; and that the best practical rule to be followed was, always to excise them as early as possible. They maintained that the disease was first local, and that the cachexy was induced by absorption from the morbid growth—was the cause and not the result. They denied the law of incompatibility sought to be established by M. Cruveilhier, and denounced his paper as one likely to be followed by the most injurious consequences in practice.

In support of these opinions, numerous cases were cited, having all the symptoms and characters belonging to what M. Cruveilhier called fibrous tumours, which afterwards became cancerous, and destroyed the patient. Some specimens, also, were brought forward, where tumours, originally fibrous, had apparently undergone the cancerous transformation, even in the uterus. Many surgeons brought forward instances of tumours, to all appearance truly cancerous, which were excised, and where there had been no return for a long series of years.

This celebrated discussion left the practical question in the same state as before, namely, that as a matter of prudence, all tumours should be removed from the female breast as early as possible, whatever be their nature. No one practitioner who took a part in it, appeared to be aware of the real structure of cancerous tumours, or knew that a fibrous as well as a foreign growth was invariably present in them. Indeed, many cited, as the best proof of cancer, the presence of the dense fibrous structure, often grating under the knife, which is exactly that part of the tumour which is least malignant.

A more perfect diagnosis, however, has already led to some useful modifications in surgical practice. Among these, Dr. Bennett alluded to the altered operation of fungus of the testicle, so successfully executed by Mr. Syme, as communicated to the Society. Another valuable modification has been introduced by M. Sedillot of Strasburgh. It is well known, that in many cases of incipient cancer, it has been advised to make the incision embrace a considerable portion of the sound textures, in order to insure eradication of the malignant growth. Thus the whole female breast has often been removed, although the extent of the tumour has been inconsiderable. In cases, however, where a restoration of parts is necessary, as in the lip, the rule is very inconvenient. M. Sedillot, therefore, in several cases, having satisfied himself, in the manner pointed out, that the ulcer or growth is not cancerous, has barely removed the indurated structure, and thus been enabled to preserve a larger amount of soft parts than he otherwise would have done. These operations have been perfectly successful.

In some cases, an exact diagnosis, formed by a microscopic examination, has prevented an operation which would otherwise have been determined on. Vogel gives a case of ulcerated breast of this kind. (*Icones Histologiæ Pathologicæ*, p. 127.) Dr. Bennett has seen two others, where, in a canceroid growth in the breast, he diagnosed non-malignant disease. All these cases ultimately recovered.

If, when this means of examination has been so little employed, such good results have already resulted, what may we expect when surgeons are more extensively aware of the benefits which may be derived from an exact diagnosis? Dr. Bennett believed that we were only on the threshold of the inquiry, and that the most important discoveries would yet be made in the pathology and diagnosis of cancerous growths, the influence of which upon surgical practice could not be calculated on.

In conclusion, Dr. Bennett observed, that he had carefully avoided theory. He had said nothing of the supposed mode of growth of cancer cells, whether the disease be dependent on a peculiar condition of the blood, induced by any particular regimen, climate, constitution, or other causes. He had confined himself entirely to facts, and endeavoured to show that cancer possessed a distinctive structure; that it may occasionally undergo a calcareous, and probably a fibrous transformation; that a knowledge of its structure is of diagnostic value; and that this has already been serviceable to the healing art, and bids fair to be still more so in the treatment of this class of fatal diseases.—*Monthly Journ. Med. Sci.*, March, 1847.

35. *Ovarian Dropsy treated by establishing a direct communication from without, with the interior of the cyst.* By W. H. BAINBRIDGE, Esq., of Liverpool, (*London Medical Gazette*, Jan. 1847.)—The subject of this case was a female 31 years of age, who had never had a child and who had first experienced an enlargement of her left side about July 1840. This enlargement continued to increase until when the patient was seen by Mr. B., in January 1842; the tumour was as large as the uterus in the ninth month of pregnancy. She was tapped by Sir B. Brodie and 25 pints of sero-sanguineous fluid were drawn off. The tumour again reappeared, and nine months after the first tapping she was again tapped. The enlargement of the abdomen again took place, and the patient, to avoid notice, adopted the singular expedient of compressing and flattening the tumour anteriorly, by means of a piece of wood placed on the abdomen, and firmly secured by a bandage. This contrivance, while it diminished the prominence of the tumour anteriorly, increased it in the vagina, and necessarily produced distension upwards and laterally, causing great distress, and an aggravated state of dyspnœa.

Six months after the second operation Mr. B. was sent for (May 1843) and found the patient suffering excruciating pain in the abdomen and the other symp-

toms of peritonitis, supervening on rupture, Mr. B. thinks, of the ovarian cyst of the left side. She recovered from this, enjoyed afterwards good health until May 1844, when another tumour began to form in the right side. About the commencement of 1846 it had enlarged so considerably that she became anxious for something to be done for her relief. Mr. B., after careful consideration, determined to perform the following operation, which he accordingly did:—

"The patient was placed in a semi-erect position on the edge of the bed. An incision about three inches in length was made in the median line, two inches below the umbilicus, extending through the parietes, and laying bare the external surface of the cyst. On endeavouring to draw out the cyst in order to remove a portion, as originally intended, I found that such extensive adhesions existed as to render this part of my plan impracticable, which was perhaps in one sense a favourable circumstance, inasmuch as it prevented any escape of fluid into the peritoneal cavity. Nothing remained, therefore, but to open the cyst, evacuate its contents, and insert a plug so as to prevent union of the edges of the wound, and closure of the opening. About 25 pints of a sero-sanguineous fluid, similar to that in the former tumour, were drawn off.

"During the four following days there was constant discharge of a similar fluid from the interior of the cyst; on the fifth day it became purulent, thence gradually assumed the character of pure pus, and so continued up to May, amounting on an average to about 8 ounces in the 24 hours. From this period it began to decrease; meanwhile no bad symptoms appeared. The patient merely laboured under the ordinary effects of the general debility consequent on such a discharge.

"It should here be stated that, for a month after the operation, stimulant and astringent injections were occasionally used for the purpose of setting up new action and stopping the discharge, but without producing any apparent good effect."

In June the lady was well enough to take a journey, and when she returned in August the tumour had entirely disappeared.

In a subsequent number of the same Journal (*Med. Gaz.*, April 1847) Dr. B. has published the following list of eighteen cases treated upon a similar principle, and nineteen cured by nature on the same principle.

Eighteen cases of Ovarian Dropsy, treated on the principle of Mr. Bainbrigge's Operation. (*London Medical Gazette*, vol 18, p. 469.)—An operation for relief of ovarian dropsy is recorded. An incision of about an inch and a half was made below the umbilicus; the sac was opened to about the extent of three inches, and evacuated, and a ligature passed through it, and secured externally, in order to keep the sac in contact with the abdominal parietes. There was a discharge for about a month, when it ceased, and the opening closed. The result was a permanent cure. By Mr. Currie, Liverpool.

Memoires de L'Académie Royale de Chirurg., tom. ii. p. 431 to 444, An. 1753.—A detailed report of two cases by Le Dran, in which an incision was made into the cyst, the contents evacuated, the wound kept open, and the suppurative process established in the cyst. The result was a permanent cure, a fistulous opening remained in one of the cases for two years, and in the other for the remainder of the time up to which he had observed the case.

It appears that subsequently to these two successful cases Le Dran was in the habit of operating in this way. He says, he always found the fistula remained permanent, except in the solitary case above given, which he closed in two years. To keep open the communication with the interior of the cyst, he sometimes employed a tent, at others left the canula, or even leaden tubes in the wound, and occasionally used injections. He remarks on the inefficacy of tapping, and then says, "J'ai osé tenter une nouvelle route, et le succès a répondu a mon espérance;" from which it is natural to infer that he was eminently successful.

Lancet, vol. xiii., p. 879.—Allusion is made to the above cases; and a similar one by Portal is mentioned, in which a cure followed.

Lancet, vol. xx., p. 603.—A case, by M. Rigollot, of St. Etienne, is given, in which, after the use of the trocar, irritating injections were employed. The cure was completed in a month.

London Medical Gazette, vol. xxvi., p. 349.—A case of ovarian dropsy, treated by tapping the tumour in the vagina. Although intended merely to liberate the fluid

by tapping, the wound kept open and a continuous discharge took place. Permanent cure.

Edinburgh Medical and Surgical Journal, vol. xvi., p. 367.—A case of operation by incision,—closure of the opening by the surgeon,—spontaneous re-opening of it subsequently, of about the size of a small pea, from which, on the slightest exertion, matter flowed freely, which the operator considered an unusual effort of nature for her relief; it was followed by permanent subsidence of the tumour, and restoration of health. By Dr. M'Keever, Lying-in Hospital, Dublin.

In my case, as in the above, I regard the continuance of the discharge as an effort of nature to suppress any further development of the disease.

Medical Times, vol. viii., p. 233.—A case is quoted as having been given by Dr. Ollenroth, in which the wound was kept open, and the contents of the sac allowed to escape through it for a considerable period; followed by a permanent and radical cure.

London Medical and Surgical Journal, vol. iv., p. 428.—A case of permanent cure is recorded, by an incision into the sac; partial evacuation of its contents, and a tent left in the wound. Through the opening a fluid, and portions of the cyst from time to time were discharged. The opening remained fistulous.

London Medical and Surgical Journal, vol. vi., p. 320.—A case, by Mr. Langley, of ovarian dropsy complicated with pregnancy. He punctured the cyst in the vagina, the contents came away, and the woman was soon after delivered. The editor remarks upon it: "The result of the case warrants paracentesis per vaginam; the advantage would be the gradual and constant discharge of the fluid by an opening so dependent." Of course he must allude to the fluid draining off as soon as formed again in the cyst, and have supposed such to have been the case in the present instance.

Philosophical Transactions, vol. xxxiii.—Dr. Houston's case of operation for ovarian tumour. He found, on introducing the trocar, that no fluid came away; but on making an incision, he succeeded in drawing off the contents of the sac, which were partly gelatinous, partly pultaceous, and very considerable in quantity. He then brought the sides of the wound together, and secured them by suture, leaving an aperture, however, through which a discharge from the cyst continued to pass for some time. The opening finally closed, and the woman was completely cured, living fourteen years after, without any return of the tumour.

Archives Générales de Médecine, vol. lviii., p. 362.—A case of ovarian abscess is given by M. Löwenhardt, of Prenzlau, in which he evacuated the contents of the ovary through an incision in the abdominal parietes. For about two months the matter continued to drain away, gradually decreasing in quantity. At the end of this time the tumour had quite disappeared, the discharge ceased, and the opening closed. He says, "La guérison était complète."

American Journal of the Medical Sciences, February, 1838, p. 380.—A case is recorded in which Mr. Mussey, in attempting to extirpate a very large ovarian tumour, was prevented doing so by numerous and extensive adhesions. He was obliged to have recourse merely to making a small incision into the tumour, through which its contents were drawn off. He kept up the opening by means of a tent. A clear liquid came away for several days; it then became purulent, gradually diminishing in quantity for three weeks; when it closed, the tumour had disappeared. A year after, the woman was quite free from any return, and was delivered of her fourteenth child.

Archives Générales de Médecine, vol. i., p. 487.—A case is quoted of an operation by Mr. Arnott, of the Middlesex Hospital, in which he punctured the vagina, and a discharge from the cyst continued for sixty-four days, when a complete cure was effected, and the opening in the vagina perfectly closed.

The editor, in his remarks, alludes to another case, similar in its nature and results to the one above mentioned, as having been published in the *Revue Médicale* by M. Recamier.

Archives Générales de Médecine, vol. xxxi., p. 427.—This is an account of an operation for extirpation of ovarian tumour, attempted by Dr. Ehrhartstein, in which, from an aperture in the external wound, serum continued to drain for some time, which afterwards changed into a milky fluid, and did not disappear till the ninth week after the operation, when the wound cicatrized, and the patient was cured.

Archives Générales de Médecine, vol. xx., p. 92.—A case is given by Dr. Dieffenbach, of Berlin, where the adhesions were such that he merely punctured the tumour after incision; a sanious matter continued to discharge itself through the wound for some time after, and the patient ultimately recovered.

Provincial Medical and Surgical Journal, vol. iii., p. 593.—Mr. Bainbrigge's operation for ovarian dropsy. In this case an incision was made through the abdominal parietes into the sac; the contents (twenty-five pints of sero-sanguineous fluid) were evacuated; a plug of lint was inserted to prevent union of the edges of the wound, by means of which a suppurative discharge was set up from the interior of the cyst, which was followed by its obliteration without a single bad symptom, and by a permanent cure.

Nineteen cases of Ovarian Disease, treated by nature, on the principle which Mr. Bainbrigge has adopted.—(*London Medical Gazette*, vol. xvi., p. 643.)—Dr. Ramsbotham relates a case of ovarian dropsy, discharged through an opening made by nature at the umbilicus; the tumour disappeared. The patient lived eight years after, and had no return of it. He also mentions a similar case of Dr. Mead's.

London Medical Gazette, vol. xxiv, p. 966.—Dr. Henry Davies gives a case of ovarian tumour in which the integuments burst at the umbilicus, and discharged a thick red fluid, which gave great relief. The discharge continued for seven years, during which the general health was good; it then closed. Two years after she died of apoplexy.

London Medical Gazette, vol. xxv, p. 396.—A case of ovarian dropsy bursting at the umbilicus is related by Mr. Douglass, of Glasgow. The woman died two months after of peritonitis. From the particulars of this case there does not appear any reason for connecting the operation and the subsequent discharge with the peritonitis.

Lancet, vol. ii., 1839-40, p. 12.—Dr. Ingleby relates a case of ulceration through the abdominal parietes, through which an ovarian cyst emptied itself. There was a discharge for some time through the opening, followed by a permanent cure.

London Medical Gazette, vol. xxxv., p. 303.—A case is given of diminution of the cyst by a spontaneous opening into the abdomen at the navel, which discharged purulent lymph, and relieved the patient in a permanent manner. By Dr. Lambrecht.

Medical Times, vol. xiii., p. 262.—A case of permanent cure of ovarian dropsy is related as having taken place after a spontaneous opening at the umbilicus, followed by a discharge of the contents of the sac, and formation of a fistulous passage, which subsequently closed.

Dublin Quarterly Journal, vol. i., p. 519.—It is stated, that Dr. Montgomery has seen three cases in which ovarian cysts discharged their contents through the parietes of the abdomen. He does not state what the final results were; but had they been unfavourable or fatal, they would no doubt have been mentioned. A similar case is also alluded to as being at the time (January 6th, 1843) in Dr. Stephens' Hospital.

Edinburgh Medical and Surgical Journal, vol. ii., p. 180.—A case, by Mr. Anderson, is given, in which a spontaneous opening took place at the umbilicus. There was a discharge from the cyst, which lasted nine months, during which the tumour had gradually disappeared; she then died, as it would appear, from general cachexy, under which she had laboured long previous to the opening being formed. The state of this patient's health a year before the operation was such as, under any circumstances, to render it improbable that she would live more than a few months.

London Medical Gazette, vol. viii., p. 291.—A case is given of discharge of the contents of an ovarian sac through a spontaneous opening in the vagina, which ulcerated, and no doubt allowed any new formed secretion gradually to escape. The consequence was almost complete disappearance of the tumour. By Dr. Elliotson.

London Medical Gazette, vol. xxxi., p. 572.—Dr. Waters gives a case of periodical return of an ovarian tumour, and its entire disappearance two or three times after a copious discharge of a thick, yellowish, ropy fluid, *viâ recti et vaginae*. After the last discharge, no return of the tumour had taken place, and the patient's health was in a satisfactory state.

Lancet, vol. ii., 1839-40, p. 12.—Dr. Ingleby gives a case of cure of ovarian dropsy, consequent on ulceration into the bladder, and permanent discharge per urethram, for upwards of a year, of albuminous fluid, shreds of coagulable lymph, and hydatids.

Lancet, vol. ii., 1839-40.—Dr. Ingleby gives a case of rupture of ovarian cyst into the intestinal canal, as evinced by the vomiting of the contents mixed with fecal matter, which he describes as lasting for some days, and followed by a cure.

Lancet, vol. ii., 1842-43, p. 422.—A case of spontaneous permanent cure of ovarian dropsy, by a discharge from the cyst per vaginam, of several days' duration.

Medico-Chirurgical Review, vol. xxiv., p. 206.—Gives three cases of cure by accidental rupture of a cyst into the vagina, and discharge through that opening; there can be no doubt that the discharge was continuous for a longer or shorter period.

"Many more cases of the above description might be adduced, if necessary, for the further elucidation of this very interesting mode in which nature operates successfully for the cure of this formidable disease.

"With respect to the *accidental cases* to which I have alluded, it appears to me that many cures have resulted from the bursting of the cyst into some portion of the intestines, or the bladder, as well as into the peritoneal cavity, under which circumstances a discharge of the fluid takes place, continuing for a longer or a shorter period, and thus terminating, as in the cases above detailed, in a more or less permanent cure. Instances of this kind are by no means rare. As to those cases where an accidental external opening has been made into the cyst through the parietes of the abdomen, as in the well-known case of the goring by a bull, &c. &c., a permanent cure has been effected on similar principles.

"The foregoing abstract," Mr. B. remarks, "professes to do no more than give a sufficient number of cases to exemplify the principle of the operation in question, and justify the conclusion I have arrived at. It is worth mentioning, that the farther I extended my search the more I became convinced that this operation has been regarded either with needless alarm or culpable indifference. In presenting these as cases in point, it is to be observed, that, with the exception of the first three on the list, it does not appear that the surgeons contemplated or understood the rationale of the operation. In their descriptions they seem to overlook the main fact, or mention it in a way to show they attach little or no value to it; hence some of the cases must have laboured under serious disadvantages, arising from careless or injudicious after-treatment, or from the non-employment of subsidiary means calculated to promote a successful issue of the operation. The cases are, however, not the less on that account to be received in evidence, but rather the more; and I have no doubt that many of the cases on record in which the cure has been ascribed to different causes, or not attempted to be accounted for unless on some vague general principle, would, if more circumstantially detailed, exhibit the particular characteristic feature of the examples I have collected.

"My list more than bears me out in the ratio I originally laid down, and even the two deaths may be accounted for, as indeed they were, by circumstances totally independent of the open state of the ovarian cyst or the discharge. It may be said that more extensive research would furnish many cases in which death has occurred either during a discharge so superinduced and maintained, or after its cessation. I much doubt whether *many* such could be adduced: I have not been able to find them. Still, I admit a few might be met with, but they cannot be considered as applicable, unless it can be shown that the fatal issue might be fairly attributed to the discharge so established and circumstanced; and, even could this be demonstrated, I feel confident it would not disturb my ratio, as a counterbalancing proportion of successful cases would also be discoverable.

"Among the numerous writers on ovarian disease, such as Morgagni, Cruveilhier, Delpech, Lizars, &c. &c., few seem to have regarded this operation favourably: they either magnify its dangers or underrate its value. The cases they adduce in evidence against it do not apply. Instead of judiciously aiding nature in her friendly efforts, they interfere with and obstruct her by means of stimulating injections or irritating substances; such as canulas, leaden tubes, bougies, &c., left in the wound,—a wound which, of all others, requires to be managed with the utmost delicacy and caution. What can be more contrary to the true principles of surgery, and what other than disastrous or negative results could be expected to follow such

practice? Cases treated in this way I exclude from the category. The errors of art must not be placed to the account of the operations of nature. Dr. Bright is one of those few authors who seem to have formed correct views on the subject, though not perhaps to have thoroughly appreciated its importance. He expresses himself to the effect that in some cases the wound does not close, and that suppuration continues for months or years, and that such an occurrence, so far from being fatal, prolongs existence. This judicious observer no doubt speaks from experience."

In regard to his own case, Mr. B. says that on reconsideration of its details he should not, in any future case, in making the incision, "consider it advisable to remove a large portion of the cyst with a view to diminish the extent of the secreting surface: I should leave its gradual contraction to nature. In all the cases above given, where nature operated, the sac remained entire, and no bad symptoms followed. There is, besides, an objection to it where the sac is free from adhesions. By removing a considerable portion of a large cyst, I should have a wound of many inches in extent to bring into adaptation with one of inferior dimensions. A puckering of the edges of the cyst would inevitably follow. These puckerings could not be applied to the lips of the external wound: union, therefore, might be incomplete, thereby endangering protrusion of the abdominal viscera and an escape of matter into the peritoneal cavity,—two very serious accidents, which must be most carefully guarded against. I should simply remove as much of the sac as would leave the opening in it as nearly as possible corresponding with that of the external wound, and unite the lips of both, accurately and smoothly, by the uninterrupted suture. I am now alluding to sacs free from adhesions at the point of operation.

"But when the sac is adherent at this point, all this labour and difficulty are saved. Here it is worthy of note, that the very circumstance which most seriously complicates the major and minor operations, so called—viz. the existence of adhesions which must be torn or cut through,—is not a source of danger, but rather a great advantage for the successful accomplishment of the present plan; and, indeed, could it be ascertained, by auscultation or otherwise, that adhesion to the walls of the abdomen existed at any particular point, I should select that point for my incision, provided it presented no extraordinary anatomical obstacle.

"After the operation, all that is required is to introduce a tent of lint into the wound to prevent its closure, foment the whole of the abdomen with warm water, and keep the patient very quiet for a few days, allowing no escape of fluid at the time of dressing. The plug should be kept in firmly by means of a compress and bandage, and removed once or oftener in the twenty-four hours, according to the amount of secretion.

"In my case, after the suppurative process had been established, the quantity of matter being for some time considerable, I placed the patient on a prone couch, to allow of its gravitation towards the external opening, and its gradual escape. More or less inflammatory action must be expected to ensue after the operation; this should be allowed to subside, and no risk incurred of its increase by leaving canulas in the wound. The mere introduction of pieces of leather, softened by steeping in oil, as substitutes for the lint plug, produced so much irritation during the chronic discharge in my case, that I was compelled to have recourse to leeches and fomentations."

36. *Successful removal of an Ovarian Tumour complicated with pregnancy.*—H. E. BURD, Esq., Senior Surgeon to the Salop Infirmary, communicated to the Royal Med. and Chirurg. Soc. (March 15) an account of a case of ovarian disease, in which he had removed the tumour by the large incision. During the operation the uterus was discovered to be in a gravid state, pregnancy being probably advanced to the third or fourth month. The patient aborted two days after the operation; she entirely recovered. The reading of this paper elicited some remarks which are of interest, especially those by Mr. Phillips and Dr. Mayo.

Mr. PHILLIPS observed that he did not rise in the hope of throwing much light on the question of the operation of ovariectomy, although he had certainly had opportunities of witnessing its performance. He would make some comments on what he thought might be considered the drawbacks referable to this operation.

1st. It had led the profession to believe that operations of magnitude on the abdominal cavity were attended with less danger and mischief than was formerly supposed. Now he thought that this opinion was erroneous, and tended to the production of mischief; for these cases could not be fairly allied to the ordinary operations on the peritoneum, inasmuch as that membrane, in cases of ovarian tumours, was from some cause so much changed in character as to be less liable to inflammation, than when these tumours did not exist. Another drawback in arriving at an opinion respecting this operation was our ignorance of the real results of the proceeding; for whilst successful cases were published with alacrity, most of the unsuccessful ones never saw the light. The difficulty of diagnosis in cases of ovarian tumours was also another drawback in regard to this operation. Cases had occurred in which the operation had been begun, and left off in consequence of an error in diagnosis, either no tumour being present, or if so, not of a kind that would bear removal. Even the case before the Society was strongly illustrative of our difficulty of diagnosis; for had the operator known of the presence of pregnancy he would not have operated. Indeed, had the case gone wrong, he would probably not have escaped without censure. This was not, however, the first case in which pregnancy had been overlooked, and the operation commenced, more than one such mistake being on record. Operations had also been begun in which the operator had been certain of finding fluid in the tumour; but no fluid whatever was present. Added to all these difficulties he might fairly assert that at the present moment we know of no certain means of determining the presence of adhesions. No doubt in some cases this might be ascertained; but in all cases, however ingenious the aids we might employ, no positive diagnosis on this point could be formed. What, then, were the circumstances which would justify us in the removal of an ovarian tumour? To answer this question, he might state that a very general conclusion was now come to, that the operation of tapping an ovarian cyst was a much more serious and dangerous proceeding than had been formerly supposed. It was at one time considered as a very simple matter; but his experience, and particularly as it related to four recent cases, had led him to a different opinion; for out of these four cases one died in a few days, and one only survived to undergo a second tapping. Here, then, was our position. A case was before us in which we knew that ordinary remedies were of little or no avail; and if ordinary tapping were as dangerous as he believed it, we must inquire whether there was more danger in the operation for removal than in tapping, and whether it offered a better chance of cure. The danger, he believed, was no doubt more imminent; but still tapping was uncertain, and often fatal. If we knew the honest results really of the operation of ovariectomy,—if, in fact, the unsuccessful as well as the successful cases had all been given to us, then we should be in a position of knowing how far we were justified in recommending the removal of an ovarian tumour, and not, as now, in a state of uncertainty and doubt regarding the proceeding.

Dr. Locock expressed his astonishment at the statement made by Mr. Phillips, that the danger of tapping was so much greater now than it was formerly. We had the same number of cases as formerly, and knew as much about the disease; he could not help, therefore, feeling surprised at the statement made by Mr. Phillips. He believed that the proceeding of puncturing a simple cyst was no more dangerous than it was formerly. He could not help thinking that in the comparison which Mr. Phillips had drawn between the dangers of tapping and ovariectomy he had quite overlooked the difference of the cases operated upon; but in our inquiry on this point, to arrive at an accurate conclusion, we must take into consideration the nature of the cyst. Now in cases of unilocular cyst, in which the patient was in good health, tapping would prolong life for many years; he himself had known cases of twenty years' duration. If, on the contrary, we tapped an unhealthy cyst, in a broken-down constitution, then there was little use in the proceeding; and these, and these only, he believed were the cases in which danger resulted from tapping. He had heard surgeons of great experience in this town state that death after a single tapping was very rare indeed. The late Dr. Gooch had told him that he never lost but one patient after tapping, although in a second instance severe peritonitis came on; but this was subdued, and the dropsy permanently cured. We could only, then, compare the operations of tapping and

ovariotomy, properly, by taking into consideration the nature of the cyst, its character, complications, &c. Which were the cases, then, in which we could substitute a better mode of treatment than by tapping? In solid tumours, without fluid, we had no good grounds for endangering the lives of our patients by an operation for their removal, because we knew that in the majority of these instances, though often painful and inconvenient, life might go on for many years, and the patient attain a good old age. In cases where the cyst was simple, and the health unbroken, and where the fluid was of a serous character, the experience of the last few years had convinced him that the most successful treatment was a single tapping, followed by due and well-regulated pressure; the pressure to be continued for months, at the expiration of which the patient would be well; or even if the fluid again formed, an operation of a more formidable character could be resorted to, for the little adhesion which might have resulted from the pressure would offer no obstacle to such a proceeding. He had seen several cases in which pressure had been employed with the most favorable result. In one case of common ovarian cyst, the tumour had been completely and permanently dispersed. It was well known that Sir Astley Cooper retarded the growth of solid ovarian tumours by the application of long continued pressure. A case had occurred to him (Dr. Locock) of a perplexing character, in which an ovarian cyst kept filling and bursting every six weeks into the cavity of the peritoneum. This continued for the space of twelve months. There could be no doubt that a tumour formed in the period named, and as regularly burst into the peritoneal cavity. After this had occurred eight or nine times, Sir Benjamin Brodie let out a very small quantity of the fluid from the ovarium; it was of a dark pea-soup colour. No further attempt was made to reduce the size of the cyst by evacuating it, and, of course, a quantity of fluid was left behind. To this collection pressure was made, the cyst never filled again, and it did not burst. The patient died subsequently from malignant disease of the liver, and on examination after death the ovarian cyst was found collapsed in the pelvis, containing a few shreds of coagulable lymph, similar to that found in the peritoneum. Four months since, another case had occurred to him; the cyst was simple, the health good. Eleven pints of fluid were drawn from the tumour, and firm pressure was applied, and had been kept up to the present time. There had been no return of the collection, and no sign of it. It might, perhaps, be said, that in this case sufficient time had not elapsed to determine the success of the proceeding. He (Dr. Locock) thought that the cases treated by Mr. Brown deserved the attention of the profession, though he thought that Mr. Brown was wrong in giving mercury and diuretics, for they were not only useless, but did positive harm. In his (Dr. Locock's) cases, Mr. Brown's plan was followed, but no mercury was given, and they went on well. He had said enough of this class of cases to show that in simple ovarian cysts, we had a simple remedy, which offered a fair chance of recovery to the patient. Now one kind of case was left, and that was where the growth was of a malignant character or the tumour many-cysted. In such cases, little benefit could result from tapping or pressure, and in these alone was an operation for removal to be performed; and it was in these, it must be recollected, that such operation was less likely than in others to relieve or cure.

Dr. CHOWNE considered that it had become the practice to defer tapping ovarian cysts, in consequence of their great proneness to refill, but that delay had the disadvantage of rendering the operation less successful, owing to the greater magnitude acquired by the cyst. In regard to the existence or non-existence of pregnancy, the difficulty of diagnosis was deeply to be regretted, where immediate decision was necessary; the usual symptoms were so interfered with and modified by ovarian disease as to render them liable to great uncertainty. He had, some time since, a patient who became pregnant, who had a large ovarian cyst, of more than three years' standing. The usual symptoms of pregnancy were so interfered with as to prevent absolute reliance upon them. After careful application of the stethoscope, however, he heard the fœtal heart. The child was born soon after the termination of the sixth month, and lived a few days. He considered the utility of the stethoscope, in such cases, to be very great. The patient is at this time nearly as well as she was prior to the event. She wears a

belt, which appears to be useful in restraining the disease. The disease has existed nearly six years.

Dr. Locock said he had seen seven cases in which pressure had been applied during the last two years, and in none had there been any return. In all the cases but one, tapping had preceded the pressure, and in one only two teaspoonfuls of fluid was drawn off. Pressure alone, in cases of solid tumour, had decreased the size of the growths.—*Lond. Med. Gaz.*, April, 1847.

37. *Case of Tracheotomy*.—Mr. ORR read to the Surgical Society of Ireland, Dec. 5th, 1846, the following interesting case. The subject of it was a female about 25 years of age, who had suffered for many months from symptoms indicating chronic laryngitis which received no relief from medicine. A suspicion that the lungs were affected, caused an unwillingness to have recourse to an operation, but the evidence of disease in those organs being obscure, while the severity of the laryngeal symptoms increased, ulceration too having, as well as could be determined by the touch, evidently encroached considerably on the epiglottis, tracheotomy was performed November 1, 1844.

The relief was complete and immediate; not the slightest bad symptom occurred to interrupt her recovery; she regained flesh and strength, but the removal or closing of the tube brought on feelings of impending suffocation. During her stay in the hospital after the operation, which continued for some months, she expectorated two whitish hard bodies the size of a lemon-seed, but as she threw them away without showing them, nothing could be determined as to their nature. The opening in the trachea showed a disposition to close, and I had on two occasions slightly to divide the margin to allow of the easy introduction of the tube. The wearing of this, too, after some time, seemed to cause irritation in the parts, which was relieved by touching them with a solution of nitrate of silver. After leaving hospital she had occasional returns of the dyspnœa, which appeared to arise from getting cold, to which she was very liable; they were neither long nor violent. In April last my friend Dr. Carte, who took an interest in the case, procured for her a tube, the edges of whose inferior opening were rounded and turned slightly in. This caused an immediate cessation of the symptoms of irritation about the trachea; she got a comfortable situation as a nurse, and as she expressed herself, was never better in her life. She continued thus till Oct. 2d.

On that day about three o'clock, while sitting at dinner, stooping suddenly to feed a dog, she felt a gush of blood issue from the opening in the throat. She immediately pressed a handkerchief to her neck, and getting on a car, came to the hospital.

The blood, which came from the orifice of the canula, was projected with force and in jerks, and was of florid redness. It was restrained by pressure with a compress of lint by Mr. Phillips, the house-surgeon, whose attention to the case was unremitting throughout, and she was seen shortly afterwards by my colleagues, Professors Benson and Hargrave, and my friends Mr. Tufnell and Dr. Carte. As any attempt to remove the canula was followed by increased hemorrhage, it was plugged, compresses of lint applied over it, and pressure made by a figure of 8 bandage, crossing under the arms and over the opposite shoulders. At this time the vascular excitement seemed considerable, the face was flushed, the pulse 120, and bounding, and there was strong pulsation communicated to the tube, but the stethoscope gave no evidence as to the source of the hemorrhage, except the negative one, that there was no aneurismal tumour.

An astringent mixture, containing gallic acid, and acetate of lead was ordered.

October 3d. This morning there was some slight return of the bleeding, which was easily checked by slight pressure without removing the compresses. She expectorated with slight coughing four or five ounces of bright red coagulum. On the first occasion no blood appeared to have entered the trachea. In the evening the hemorrhage returned with great violence. It was plain that if the canula had opened any vessel by ulceration that its presence in the wound must prevent any hope of a successful termination to the case. Under these circumstances, with the advice and assistance of Dr. Benson, my other colleagues being unfortunately unavoidably absent, I determined to remove the tube and supply its place with a piece of fine linen introduced like a cone, and filled afterwards with lint, which

would form both an efficient plug less irritating than the silver canula, and be capable of easy removal whenever desired. With the view of controlling hemorrhage during the removal of the tube, Dr. Benson made pressure with his finger above the sternum and below the opening in the throat; as this had the effect of stopping the pulsation which was communicated to the tube, it was hoped that it might be removed with safety; but on withdrawing it about a quarter of an inch, such a gush of blood came by its side as obliged me instantly to push it back under pain of seeing the patient perish on the instant. The compresses and bandages were reapplied, and no more hemorrhage followed.

As the stomach had become irritable, the use of the astringent mixture was discontinued, and she was directed to take ice and cold chicken broth.

October 5th. Twenty-four hours elapsed without any hemorrhage, but in the night between the 4th and 5th it returned. A consultation was held this day, but in the absence of any proof from what vessel the hemorrhage proceeded, it was not deemed advisable to undertake any operation in search of it. It was agreed to attempt the removal of the canula, which was now effected, without hemorrhage, and the aperture filled with dried sponge. Pressure was then applied as before.

It is needless to continue the particulars of the case; the bleeding returned at shorter intervals, and she expired early on the morning of the 6th, having survived the first hemorrhage eighty-six hours.

Post-mortem eight hours after death—General appearance of the body well nourished; surface very exsanguineous.

Muscular system well developed, unusually red, especially when the cause of death is considered.

The larynx and trachea were removed with the integuments about the artificial opening, the upper portion of the sternum and the arch of the aorta and great vessels arising from it.

On proceeding to make a careful dissection of the removed parts, it was found that the loose cellular tissue which usually exists in considerable quantity about the bifurcation of the trachea and the great arteries and veins at the root of the neck, was converted into a semi-cartilaginous structure matting all the parts together so as to form one apparently homogeneous mass. This being cleared away with great care, it was found that the canula had gradually worked its way behind the sternum and in front of the trachea, the rings of which were in some places slightly torn, till it reached the arteria innominata, which it had opened by ulceration, almost close to its origin from the arch of the aorta. The sides of this false passage were formed by the altered semi-cartilaginous structure before alluded to. On slitting up the aorta and innominata, the opening into the latter was found to be of sufficient size to admit a goose quill, and together with a considerable portion of the passage made by the canula, was occupied by a firm plug of coagulum which commenced in the aorta about an inch before the origin of the innominata, and appeared to extend along the arch beyond that vessel.

Very little marks of disease were found about the larynx and epiglottis. The edge of the latter was thinned and in parts irregular, and presented depressions on its laryngeal surface, as if from the effects of ulceration. The upper part was of a yellower colour and seemingly more transparent than the lower.

There was some congestion of the lungs, chiefly the right, with old adhesions about their apices. On handling them, several firm masses of different sizes were felt, which, on being cut into, were found to consist of crude tuberculous matter.

Such is a succinct account of this interesting case—interesting not only from its novel—I believe I may say unique—termination, but also from the important practical deductions which may be drawn from it, as well as the physiological speculations to which it may give rise.

And first as to the actual condition of the larynx at the time of the operation. There are many other affections which simulate chronic laryngitis; of these perhaps the principal are tumours pressing on the tube and hysteria. The post-mortem examination showed that the first of these affections did not exist. The second might produce many of the symptoms under which the patient laboured, and the comparatively normal state of the larynx may be pointed to as confirmatory of this opinion. That it may have assisted in aggravating the symptoms is possible,

but I cannot allow that it was the sole agent in producing them. In the first place, the disease commenced after repeated attacks of bronchitis; secondly, the restoration of the uterine secretion, which was at first scanty, was not followed by the slightest amendment; thirdly, there was tenderness on pressure over the larynx, which Mr. Ryland, in his work on the Larynx and Trachea, lays down as a diagnostic difference between hysteria and chronic laryngitis; lastly, the epiglottis was examined carefully at different periods by many experienced surgeons, and not one for a moment expressed a doubt as to the gradual encroachment of the ulceration. A small portion was removed for the purpose of microscopic examination, but though differing considerably from Müller's engravings of the structure of that organ, it must be attributed to its having been kept some time in spirits, as a portion of a healthy epiglottis, which had also been kept in spirits, presented almost an identical appearance. The possibility of the restoration of this organ after being partly destroyed, will, I know, be denied by many, but we know that the epiglottis is capable of increased growth, as may be seen in the specimen in the Park street museum, where that organ measures two inches in length, to which Dr. Stokes has applied the term "leaf-like expansion of the epiglottis;" and if capable of this increase of growth, why may it not also be capable of reproduction? Nor do I think that the *ipse dixit* of any author, however accurate and learned, should outweigh actual observation.

The second consideration is—Did the tubercles in the lungs exist previous to the operation? There is every reason to believe they did, as their presence was strongly suspected before it was performed, and the operation in fact deferred till the last from the fear of hastening their progress: besides, since its performance, the patient never presented any more symptoms than she had previously done. If this be the case, it is a fact of practical importance to be borne in mind in weighing the propriety of an operation. If there is a chance of tubercles in an early stage not being hastened to suppuration by tracheotomy, it might extend hopes of relief when the hand is now withheld from fear of the consequences. The immunity which the patient experienced in this case I attribute to the care with which she was guarded from cold immediately after the operation.

Thirdly, we have strongly impressed on us the necessity of watching those cases in which a tube has to be worn, lest such an unhappy termination as the present should be the result. It is plain that from the moment the false passage begins to be formed, the use of the canula becomes unnecessary, as no air can pass through it. How long in the present case this was forming, it is impossible to say, but it has evidently been the work of some months. The opening in the rings of the trachea is perfectly free and exactly opposite the wound in the integuments. A straight tube would probably have prevented the fatal result, and it may be well to remember that in cases where the tube is to be worn, and the patient is not likely to come under the surgeon's eye.

Lastly, I have only to refer to the efforts of Nature to arrest the hemorrhage. The beautiful provision by which this is effected has been so often and so ably enlarged on, that I shall content myself by directing attention to the firmness and size of the coagulum which could resist for any time the almost direct action of the heart.—*Dublin Med. Press*, Dec. 23, 1846.

38. *On the Use of Starch Bandages.* By Dr. ROGETTA.—The starched apparatus has now been employed for a sufficient length of time, at the clinic of La Charité, in the treatment of fractures, to enable us to form a definite and mature opinion of its value. We are the more willing to weigh its value, because on this point there is much diversity of opinion among the surgeons of Paris, and because we have before us many facts capable of affording us the grounds of a decisive judgment on this subject. First, it is to be remarked, that in the Parisian Hospitals the starched apparatus has been adopted into general use by two surgeons only, namely, Velpeau and Blandin. But yet this apparatus has been everywhere tried. At first it was applied indiscriminately to fractures of the extremities, of all kinds. Velpeau himself, in his first memoir, extolled it, without any exception. In the sequel, nevertheless, unsatisfactory results were noticed in oblique fractures of the shaft of the femur, and Blandin was the first to give up this method in fractures of that kind; and Velpeau finally did the same. At the Hotel Dieu we have seen in fact

such fractures treated by this apparatus, present, some an enormous riding of the fractured extremities of the bone, others an entire failure of reunion, owing to the starched bandage forming, as it dried, an arch projecting from the limb, while, as soon as the limb itself lost its former swelling, there was no longer a coaptation by the apparatus; the muscles contracted without impediment, and dragged the disunited parts so as to ride more and more on each other. Velpeau has doubtless been led, by cases like those described, to abandon his first opinion; and his doing so is creditable to his love of truth. Indeed, the cases which we have seen so treated at La Charité, though cured, were not remarkable for freedom from deformity. Thus such fractures must be left to the old treatment of Scultetus, with the addition of continued extension, for which purpose a starched bandage suffices. Though objectionable at the commencement, yet we must add that, towards the end of the treatment of oblique fractures of the thigh, when the patient begins to walk about on crutches, the starch apparatus answers admirably. What we have said, applies also to fractures of the body of the humerus. But as regards fractures of the neck, and of the condyles of the humerus, as well as of the condyles of the femur, the starched apparatus, if applied after the swelling has gone down, is of the greatest utility. Velpeau and Blandin apply the starched apparatus to all other fractures, namely, to fractures of the leg, of the forearm, and of the clavicle. For the forearm this apparatus possesses very great and obvious advantages. But we confess we cannot see its superiority over the common apparatus in fractures of the leg. The state of the limb cannot be ascertained till it is too late to remedy the riding of the bones, if that shall have taken place. Thus the starched bandage, though it may be regarded as an important acquisition to surgery, owing to the many applications of which it is susceptible, in various departments of practice, is far from having displaced the treatment handed down to us by Scultetus. It is proper to add, that Velpeau uses but a weak solution of starch, so that his bandages are not very stiff. The starch is first worked up with spirit, and then water is added, to bring it to the consistence of syrup. The bandages, after being dipped in the solution, are squeezed as much as possible, and the whole dries in a few hours if the limb be placed on a pillow covered with a large sheet of paper.—*Annales de Thérapeutique Médicale et Chirurgicale*, Jan. 1847.

39. *Diagnosis of Strangulated Hernia in the Foramen Ovale.*—By Dr. ROESER, of Bartenstein. Cases of hernia of the foramen ovale are rare, and except when very large, are seldom detected until revealed by dissection after death. The attention of Dr. Roeser was particularly awakened to this case from the circumstance of his having previously met with one, in which the presence of the hernia escaped detection until dissection disclosed the disease. In the present case he was more fortunate; the patient was a female peasant, about thirty years of age, who had had one child, two years ago, and another ten years, before. For six years she had suffered at long intervals acute pains at the stomach, which arose suddenly without apparent cause, and spread over the whole abdomen, but chiefly around the umbilicus, and these after continuing for some hours, subsided most commonly after several attacks of vomiting. On the 16th of February, 1846, she had an attack of the usual pains at the stomach and around the umbilicus, but notwithstanding the occurrence of vomiting at the end of some hours, the pains did not subside. On the 17th, blood was drawn, and two ounces of castor-oil administered without any effect—and morphia was given. On the 18th, she was seen by Dr. Roeser. There had been vomiting in the night, without mitigation of the pains over the abdomen, and there was now an acute burning sensation at the stomach; the urine had been hot and scanty, and for the previous twelve hours none had been passed; she could not lie on either side; when placed in a sitting posture, she complained of an acute pain in the bowels, and of the bowels being projected forwards by twitches: belly was somewhat swollen, presenting inequalities, arising from distended portions of the intestines; pulse rather frequent, not hard; resonance everywhere clear, tympanitic even in the hypogastric region, though the urine had not been passed for twelve hours. No marks of hernia were found at the usual apertures. Dr. Roeser was led to examine the pectineal region, when he remarked a tenderness over the foramen ovale of the left side, which was not present on the right side. On a more particular examination, he found, at the upper and inner part of the foramen, a tumour the size of a nut, of

an elastic feel, and very painful when touched. The patient now remembered that she had felt pain in the same situation in former attacks. The tumour might have been mistaken for a gland, but that it was more tense, smooth, and less pasty, and escaped under the fingers, while pressure caused an inward pain, which extended towards the epigastrium. Percussion furnished no diagnostic, owing to the thickness of the integuments and the smallness of the tumour. On the evidence just recited, it was obviously a hernia of the foramen ovale. After the taxis had been kept up for half an hour, with great pain to the patient, both in the lower part of the abdomen, and also at the stomach, along with nausea and eructations, the hernia was reduced. There was immediate relief, and in half an hour the bowels were evacuated. On examining the region of the superior and inner angle of the left foramen ovale, there was found a deep depression, admitting the point of the finger, which depression was hardly perceptible on the right side. A truss, with an elongated neck and cushion, was applied, which fitted exactly. In this case the loop of the intestine had escaped between the two obturator muscles and the obturator ligament, and was lodged under the pectineus and short adductor. This hernia is most probably more frequent in females, owing to the greater size of the foramen; and the acute pains attendant on it must arise from the pressure on the obturator nerves. This case is a new instance of the necessity of examining all the apertures by which the viscera can escape when one is called to treat colic pains, and the so-called neuroses of the abdomen.—*Gaz. Méd. de Paris*, 6 Feb., 1847, from *Roeser and Wunderlich's Archiv. für Phys. Heilk.*, No. 3, 1846.

40. *Galvano-Puncture in the Treatment of Aneurism.*—In the *Annales de Thérapeutique* of February last, the history of a case of carotid aneurism is given, which terminated fatally under this treatment. Suppuration of the sac, with inflammation of the surrounding parts, followed the application of the galvanism, and the patient died from suffocation while the external coverings of the aneurism were attenuated, and apparently in the act of giving way. On examination after death, coagulation of the blood contained in the sac did not appear to have been promoted by the effect of the galvanism.

It appears that the galvanic current, although it may have the effect of causing coagulation of the blood, is liable to produce inflammation, not only of the integuments, but also of the sac itself. Considerable difficulty is experienced at the same time in withdrawing the needles, owing to their points becoming oxidated from the effects of the galvanic action; so that it is probable the adoption of this method of treatment of external aneurism will be found unsuccessful.—*Month. Jour. Med. Sci.*, March, 1847.

41. *Iodine and Iodide of Potassium in the Treatment of Syphilis.* By Dr. F. A. ARAN.—After an elaborate historical sketch of the introduction and employment of iodine in syphilis, Dr. Aran gives an account of Dr. Moij'sisovic's method of treating this disease, by means of iodide of potassium combined with iodine. According to this physician, his plan cures syphilis in three or four weeks. His method is to give the iodide of potassium in doses of from 5 to 20 grains, three times a-day, while, at the same time, a bath of iodine, iodide of potassium, and common salt is employed, the quantities of iodine and iodide of potassium used in each bath, being a drachm of the former, and a drachm and a-half of the latter, and the iodine is not to be added to the water till the patient is in the bath. The patient is to remain an hour in the bath, and gets into a warm bed to promote perspiration. During three days this practice is continued with the least dose of the iodide above mentioned (5 grains three times a day), when some itching of the skin begins, and then the dose of the iodide is gradually to be increased. About the 10th or 11th day a febrile state arises, accompanied with itchings of the skin, and a scarlet rash or an eruption like zoster. This rash or eruption is followed by a desquamation from the 15th to the 21st day, and these taken together indicate that the iodization has reached its maximum, and Dr. Moij'sisovic affirms, that he has never seen any return of the disease in those cases in which the eruption and desquamation ran this regular course. He employs a weak solution of iodine and iodide of potassium against exostoses, condylomata, and pustules, and uses local baths still weaker. This kind of treatment Dr. Moij'sisovic uses

against every sort of syphilitic affection, whatever be its duration, and even in primary symptoms. Dr. Aran complains that there is no account of the cases in which this treatment failed, or in which the disease returned, and calls on the physicians of venereal hospitals to make trial of this practice, with the view of determining its merits with greater certainty.

Dr. Aran says, respecting the efficacy of iodide of potassium in tertiary symptoms, that there is an almost universal agreement among those who have published on the subject all over Europe. Hassing says, of 250 cases falling under this head, in the Copenhagen Hospital, treated with the iodide, there were forty-nine deep ulcers of the throat, of which forty-two were cured, three benefited, and four only successful,—the cure in the latter being effected at last by mercurials; three cases of subcutaneous tubercles, of which two were cured; fifty-one cases of tumour of the bones and periosteum, of which six were cured and thirty-two benefited, the treatment failing in twenty-three,—while the duration of the treatment was on an average nearly thirty-six days; of seventy-three cases of osteocopia, sixty-five were cured, three benefited, and five failed,—the average duration of the treatment being about ten days; of seventeen cases of caries and necrosis, six were cured, four benefited, and seven failed,—the average duration of treatment being forty-four days. Bassereau reports a similar success in tertiary affections, in the practice of Ricord at Paris. Gauthier gives the like account of the effects of this treatment at Lyons; and Payen describes the results as equally satisfactory at Aix, on a most extensive experience of the remedy.

In the symptoms, however, which come under the head of secondary, there is not the same unanimity as to the efficacy of this remedy. Hassing describes its employment in 217 persons affected with the secondary form: Of these, twenty suffered under flat pustules (*pustules plates*), eight at the arms, ten at the genital organs, and two in both places at once; and seven were cured, four benefited, nine derived no advantage: forty-nine suffered from squamous and pustular eruption; and twenty-six were cured in the mean period of forty-eight days, nine were benefited, and fourteen derived no advantage: forty-seven had superficial ulcers of the throat and mouth; and twenty-four were cured in a mean period of about forty days, eight were benefited, fifteen derived no advantage: twenty-seven had pustular eruption; and nine were cured in a mean period of fifty days, four were benefited, four derived no advantage: there were twenty-one cases of tubercular syphilitic eruption, and fifteen were cured,—the mean duration of the treatment being about forty-four days, three benefited, and three derived no advantage: fifty-three cases of syphilitic rupia; and forty-three were cured,—the mean duration of the treatment being about thirty-nine days, seven were benefited, and three derived no advantage. We cannot make room for the analysis of the cases of the secondary form given by our author, as treated by Ricord, Gauthier, and Payen; but, on the whole, it appears that less success attends the treatment of those of that form with the iodide of potassium, than those falling under the head of tertiary symptoms. Gauthier and Payen agree that generally the older the secondary symptoms are, and the more approaching to the character of the tertiary, the more influence has the iodide over them; for example, when syphilitic eruptions become ulcerated. And Payen adds, that the iodide is particularly indicated when the secondary affections are obstate under the mercurial treatment, and that the iodide should be resorted to at once in cases which, from their long standing, are likely to resist the influence of mercury, and in those cases in which, from the presence of debility, the constitution requires additional tone.

As regards the use of the iodide of potassium in primary symptoms, there is much difference of opinion among the authorities referred to. Hancke, Kluge, Hocken, Hassing, and Bassereau, give an unfavourable account of its effects, and Hassing doubts its efficacy even in bubo; on the contrary, Bazin, Midtler, and Payen, assert its efficacy in primary sores, without or with bubo. On this discrepancy our author remarks, that the cases referred to by Payen in particular are cases of indurated chancre; and these, he says, are not regarded by some authorities, as by Ricord, among primary affections. On the whole, then, Dr. Aran considers the title of the iodide of potassium to be considered as the basis of treatment in primary affections to be unsubstantiated, though when circumstances prohibit the common treatment, it is sometimes of service.

Respecting the comparative effects of the treatment by the iodide, when the mercurial treatment has, and when it has not, been previously used, Dr. Aran observes,—“Hence it follows that syphilitic spots, pustules, superficial ulcerations of the throat, caries and necrosis of bones, are the more easily cured by the iodide, that a mercurial treatment has been premised; and, on the contrary, that tubercles, rupia, deep ulcerations of the throat, swellings, and deep-seated pains of the bones, yield more readily when no mercury has been previously employed.”

Should the iodide be used alone or combined with mercurials? Hassing's conclusion is that in the treatment of secondary affections, the combination affords no beneficial results, and this opinion is supported by the evidence of numerous cases treated in the Copenhagen Hospital, in the mixed mode. Gibert and Ricord, however, stand opposed to Hassing's decision on this point.

As to the proportion of relapses, little statistical evidence has been supplied hitherto by authors. Hassing says, that relapses are rare in the case of tuberculous eruption, syphilitic rupia and deep ulcerations of the throat, while they are common in the flat pustule, syphilitic eruptions of the papular and squamous character, and superficial ulcerations of the throat—and adds, that these relapses are most common at the end of about eleven months, though he has seen them take place at the end of seven weeks, and of between four and five years.

With regard to the proper dose, Ricord has carried the dose to the greatest extent, for example, as far as 135 grains in a day. Our author considers doses so large as altogether unnecessary, and cites as sufficient, the doses mentioned by Hassing, whose largest dose does not exceed fifteen grains a day, Gauthier, who does not go beyond thirty grains a day, and Payen, whose extreme dose is about sixty grains a day. There is this general agreement on the administration of the remedy, that the dose should be gradually augmented, and that it should be kept up for some time after the symptoms have disappeared.—*Month. Jour. Med. Sci.*, March, 1847, from *Archives Générales de Médecine*, Jan. 1847.

42. *Descent of the Spleen into the Pelvis with symptoms of Subacute Peritonitis and of Intestinal Strangulation.*—M. Bozzi reports, in the *Gaz. Méd. de Milan*, a case of this description. The subject of it was a female 27 years of age, with curved spine, in the third or fourth month of pregnancy. From the commencement of uterogestation she had been daily affected with vomiting, and at the period mentioned, symptoms of subacute peritonitis and intestinal strangulation manifested themselves, under which, in three days, she succumbed. On post-mortem examination, the spleen was found above the right iliac region, greatly enlarged, weighing six pounds, of a black colour, and resting in part on the uterus and in part on the lower portion of the ilium and the cæcum, which were very much injected. The cord of splenic vessels was twice twisted on itself, by which the return of blood by the veins was impeded, and which was the cause of the great size acquired by this viscus. The peritoneum was injected principally at the points at which the spleen pressed. Nothing was observed abnormal in the interior of the intestines.—*Journ. des Connaiss. Méd. Prat.*, Nov. 1846.

43. *Ligature of external Iliac Artery.* (*Lond. Med. Gaz.*, Feb. 1847.)—The subject of this case was a man 40 years of age, admitted into the Hertford Infirmary, Sept. 2d, 1841, with popliteal aneurism on the left side. On the 6th of Sept., Dr. JOHN DAVIES applied a ligature to the femoral artery four inches below Poupert's ligament. On the 23d a slight, and on the 24th a tremendous hemorrhage came on, and Dr. D tied the vessel above the profunda, which arrested the hemorrhage. On the 9th Oct. hemorrhage occurred from the second wound, and Dr. D. tied the external iliac. The patient did well until Nov. 4th, when slight hemorrhage came on; this recurred on the 15th and 25th; the leg became gangrenous and the patient died 22d December.

44. *Diagnosis of Mercurial Sore.*—Dr. PORTER, in a valuable course of lectures on syphilis, published in the *Dublin Medical Press*, gives the following as the characteristics of the mercurial in contradistinction to the venereal sore:—

1. Mercurial sores are not necessarily circular or oval in shape, neither are their

edges regularly defined ; on the contrary, they vary in these particulars, and assume different forms as they spread ; their edges are often quite ragged, loose, and undermined, and their borders are often marked with a thin, transparent cuticle, like that of a newly-formed cicatrix, extending quite around them, and giving them a silvery-white appearance.

2. The bases of mercurial sores are not hard, neither are their surfaces covered with the tenaciously adherent lymph so characteristic of venereal ; on the contrary, the surface of the mercurial ulcer may present every variety of shape and appearance, sloughy at one spot, deeply excavated and rapidly ulcerating at another, with exuberant granulations at a third, and exhibiting a tendency to heal at a fourth.

3. But the most striking characteristic of the mercurial ulcer is, its tendency to spread, and the manner in which it enlarges itself. Venereal sores, when not affected by phagedena, increase slowly, and having reached a given size, remain so ; the mercurial generally spread quickly, and there seems to be no limit to the size they may possibly attain. I have seen an ulcer as large as my hand in each groin of the same individual. Mercurial sores, too, are easily distinguished from the venereal, when they assume an herpetic character, and heal in one part whilst they are spreading in another, which the latter never do ; this latter diagnostic is often extremely valuable in ulcers of the throat and on the penis, where any extensive loss of parts may be most sensibly felt during the life of the patient. The mercurial ulceration, too, often attacks the cicatrix of a recently healed chancre, and a fresh sore is thus formed—a circumstance that does not happen to the true venereal sore, except by some accidental injury, or the application of a new infection.

45. *Mercurial Action not a Preventive of Secondary Symptoms.*—MR. HOLMES COOTE has published in the *Lancet*, Ap. 24th, a short paper for the purpose of showing that the full and distinct action of mercury, though it cures the primary symptoms of syphilis, is not the sure preventive of secondary contamination which it is commonly thought to be. To prove this he has recorded fifty consecutive cases of patients suffering from severe secondary and tertiary symptoms, of which seventeen are related in the present communication, from the analysis of which he determines that mercury is unable to eradicate the venereal poison.

OPHTHALMOLOGY.

46. *Symblepharon.*—MR. WILDE, in a highly interesting *Report on the Progress of Ophthalmic Surgery*, (*Dublin Quarterly Journal of Med. Sci.*, Feb. 1847,) gives the following account of an operation which he has performed with success, for the relief of this very intractable affection. “During the last two years,” he remarks, “the number of cases where, from mechanical or chemical injuries, adhesion between the ocular and palpebral conjunctiva had resulted, which presented at St. Mark’s Ophthalmic Hospital, caused us to pay particular attention to this subject, and we have found the following mode of operating perfectly successful, even in cases in which the method formerly in use, of merely dividing the fræna or extensive adhesions, had been more than once previously resorted to without effect. Some of these cases consisted in complete adhesion of either upper or lower lid, through the greater portion of its extent, to the surface of the globe ; the newly-organized material, or dense, fibrous, connecting band, in some cases merely approaching the margin of the cornea, in others expanding largely over its surface, and rendering vision more or less imperfect. In some, the motion of the lid was completely checked by the shortness of the frænum and the intimate cellular connection between the lid and globe, by which the motions of both were greatly curtailed : others, again, particularly where they proceeded from the angles of the eye toward the centre of the cornea, strongly resembled fleshy pterygia. Beside these divisions, there is another which, in a pathological point of view, should be attended to ; namely, into those which are attached by their whole length, and those in which the new attachment or adventitious membrane forms a bridge, leaving a portion (at the apex of the triangle) of either ocular or palpebral conjunctiva free. In

these latter cases, a fine, flexible wire probe was passed under the arch, and where such arch or bridge did not exist, it was pushed through the lowest part of the adhesion, and its ends held by an assistant, or retained in the left hand of the operator. By this means the globe was fixed, and the lid drawn forwards. The dissection was then commenced at the point most distant from the cornea, and we endeavoured to make the flap raised up as large as possible. In effecting this, our efforts will be greatly facilitated by doubling up the probe, and by its means drawing out the pterygium from the globe. In this way we have succeeded in dissecting a very large flap of membrane off the entire surface of the cornea. If, upon examining the point from which it is reflected from the lid, it be found to have too extensive a base in the perpendicular direction, the lid should be everted, and this again lessened by repeated touches of a fine scalpel. The extreme apex of the flap should then be attached by a fine suture to the lowest point of raw surface on the *interior of the lid*, and other sutures applied along its edges as the extent of surface may require. By this means the external mucous or cuticular surface of the old adhesion or pterygium will be presented to the raw surface of the subconjunctival cellular tissue on the globe, and thus adhesion completely prevented. Where this latter has been but of moderate extent, we have drawn the conjunctiva together, and closed it by three or four points of fine suture. There are cases in which the base of the triangle formed by the adhesion is on the globe, and the apex at the margin of the lid, leaving a large surface of the palpebral conjunctiva unaffected, and here we might be inclined merely to divide the fræna; but if the opacity has spread over the cornea, although we may succeed in removing the more immediate cause of the deformity, the leucoma will inevitably remain, and therefore we have, in such cases, carefully dissected the membrane off the cornea, and removing a portion of the palpebral conjunctiva, substituted the flap in its place, attaching it as already described.

"We would recommend as long a time as possible to be allowed to elapse between the origin of the disease and the period of the operation, for by so doing, the band of adhesion becomes considerably lengthened, and also lessened in vascularity.

"The principle of this operation has long been known, but has not, we believe, been hitherto acted on in this country. Dieffenbach has, we believe, described a mode of operating somewhat similar in principle, and M. Blandin has related a case during the last year, in which he succeeded in removing a symblepharon by a somewhat analogous proceeding."*

[We performed this operation successfully four years ago on a patient in the Wills' Hospital. The details will be found under the head of American Intelligence in this No.—*Editor.*]

47. *Opacities of the Cornea.*—Mr. WILDE, in his *Report on the Progress of Ophthalmic Surgery*, (*Dublin Journal*, Feb. 1847,) makes the following very just remarks in regard to this affection:

"Scarcely a month passes that we do not read of the wonderful cures effected in cases of specks, feathers, nebulæ, clouds, opacities, pearls, leucomas, albugos, cicatrices, and even staphylomas of the cornea, by specifics of various kinds, from prussic acid to mesmerism; but, from the days of Tobit to Turnbull, the same silence or ignorance in describing the positive pathological condition of the cornea has prevailed. Some of the cases of corneal opacity may be removed simply by time and the improvement of the general health, whilst others never can be obliterated; the difference consisting in the original cause, the precise seat of the opacity, and the existence or non-existence of synechia anterior, or attachment of the iris to the cornea, in which case, no matter how small the opacity, it never is removed; while, where it does not exist, the cornea may clear either by the efforts of nature or by the influence of remedies, notwithstanding that the opacity may extend over its entire surface. There are, however, cases of very slight opacity indeed, which never are removed, and therefore, it behoves the ophthalmic surgeon to be thoroughly acquainted with all these circumstances, in order to form an accurate prognosis, and to be able to state to patients, or their friends, what may be the final result of such cases."

* *Gazette Médicale*, Feb. 28, 1846.

48. *Causes of Strabismus.*—"There are certain cases of Strabismus in which the want of parallelism is caused by the foci of the eyes being of different lengths—that in which the focus is shortest, being almost invariably the eye to turn in, and such cases may be greatly improved, if not entirely remedied, by the use of glasses. There are other cases of strabismus which appear to be caused by certain portions of the retina becoming insensible; and in such cases, we should be very cautious, indeed, how we interfere, for it is quite possible that the removal of the deformity may render the patient's vision much less distinct than before."—*Dublin Quart. Jour. Med. Sci.*, Feb. 1847, from *Lancet* for July 7, p. 160.

49. *Strabismus and Partial Amaurosis from thickening of Neurilemma of a portion of the Optic Nerve.*—HERR BÖHM relates the following interesting case. A lad 19 years of age, had external strabismus of right eye since his childhood. "At six years old this affection was attended with double vision, but without pain or other inconvenience. The globe then gradually protruded, and the pupil now turned upwards and outwards, and at nineteen his vision in that eye had decreased so much that he could scarcely distinguish one coin from another. He was advised against having the operation performed, and the cause of the disease was diagnosed to be a non-malignant swelling at the bottom of the orbit. As he died of consumption at Berlin, an opportunity was afforded for the following interesting dissection. The optic nerve, for something more than a quarter of an inch posterior to its insertion into the sclerotic, was normal, but behind that it swelled out to the size and shape of a large olive, which lay across the bottom of the orbit, and projected the globe forwards and outwards in the manner we have described. Behind this swelling it again assumed its natural size, and turning back through the foramen opticum into the cranium, continued natural through the remainder of its course. The swelling had an unnaturally hard feel, and, when cut across, was found to consist chiefly of the thickened neurilemma. Examined under the microscope the nervous matter was found unaltered. Swellings upon the nerves, in other parts of the body, are not unusual; but in the optic nerve it is a very rare occurrence indeed."—*Dublin Quart. Jour. Med. Sci.*, Feb. 1847.

50. *On a luminous appearance of the Human Eye, and its application to the detection of disease of the retina and posterior part of the eye.* By WM. CUMMING. (*Medico-Chirurgical Transactions*, vol. xxix.)—The luminous appearance of the eyes of cats, dogs, rabbits, oxen, sheep, and other animals, has long been known, and referred to the reflection of light by the tapetum; as also the reflection from the eye of the albino; the reflection produced by morbid deposits in and other changes of the retina; and from the deficiency of pigment in persons not albinos.

The object of this paper is to show that the healthy human eye is equally or nearly equally luminous as the eye of the cat, dog, &c., when observed under favourable circumstances, and the application of the abnormal appearance, or want of this luminosity, to the detection of changes in the retina and posterior part of the eye.

The reflection from the posterior part of the human eye may be seen, Mr. Cumming says, in the following manner: "Let the person whose eye is to be examined be placed at the distance of ten or twelve feet from a gas or other bright light; the rays of light must fall directly on his face; all rays passing laterally off his head must be intercepted by a screen, placed half way between the light and the eye examined. If the reflection be bright, it will be at once seen from any spot between the light and the screen.

"The following observations were made in two rooms; in one of which was a gas-light, the other completely darkened. The person whose eye was to be viewed was placed in the dark room, five feet from a half-closed door opening into this room; he directly faced the light, also at the distance of four or five feet from the door.

"The appearance of the reflection was in most cases extremely brilliant, when seen from a position between the door and light. In some, it was at once obvious with the door wide open; in others it was seen with great difficulty, and not till every ray of light passing to the side of the iris was carefully intercepted by the door on one side and the hand or a book on the other. The reflection was always seen much more readily and brilliantly, when the eye was turned slightly

to the side, and the rays of light passed through the pupil obliquely. On passing to the outer side of the door, the luminosity was seen with greater difficulty. In this position, it is necessary to have the eye turned to the side, to exclude all rays by the hand, except those passing directly to the eye. In this way, the reflection may be seen distinctly at the distance of eight inches.

"In the majority of cases, however, it may be seen as follows: Let the person under examination, sit or stand eight or ten feet from a gas-light, looking a little to the side; standing near the gas-light, we have only to approach as near as possible to the direct line between it and the eye to be viewed, at once to see the reflection. Or, in a dark room, a candle being placed four or five feet from the eye, if we approach the direct line between them we shall be able at once to see it in many cases. If solar light be admitted through a nearly-closed shutter into a dark room, the luminosity may be seen when the pupil is tolerably dilated, the patient standing five or six feet from the aperture, and the observer occupying the position before indicated.

"These then are the circumstances necessary for seeing the luminosity. a. That the eye must be at some distance from the source of light; the distance being greater in proportion to the intensity. b. That the rays of light diffused around the patient (and sometimes around the eye itself) should be excluded. c. That the observer should occupy a position as near as possible to the direct line between the source of light and the eye examined; hence it is sometimes necessary for the observer to stand obliquely, that his eye may approach nearer to the direct line.

"The appearance of the reflection itself not only varies much in colour and intensity in different persons, but also from the circumstances under which it is seen, viz., the greater or less intensity of light, the position of the eye examined, and the distance at which it is viewed.

"When the reflection is seen under the influence of a dim light, as that from a candle, or a few solar rays, a red lurid glare, like that from a dull coal fire, is observed, evidently proceeding from the bottom of the eye, and, though not distinctly concave, yet conveying the idea of concavity. The character of the reflection thus seen by a faint light, at the distance of two or three feet, is very uniform, and does not present much variety of tint.

"When the eye receives rays from a good bright light ten feet distant, and we stand near the light, the reflection is then seen extremely brilliant; presenting a fine metallic lustre, and varying from a bright silver or golden, to a decided red tint: the latter being the more usual colour. While viewing the reflection at this distance, it sometimes undergoes a distinct change, suddenly altering from a copper or red colour, to a silver tint: this happens sometimes in consequence of a slight movement of the eye, but not unfrequently is observed without any movement having taken place.

"Although the reflection is more readily seen in an eye with a large pupil, its lustre does not depend upon this circumstance. In two eyes with pupils of equal diameter, the intensity of the reflection frequently varied greatly. In one case, in which the reflection was very dusky in appearance, and the pupil small, atropine was dropped into the eye. I then observed that, though the extent of luminosity was increased, it still retained the same dusky hue. The greater facility with which the reflection is seen when the eye is directed slightly away from the light, appears to depend on the more patulous condition of the pupil.

"On approaching within a few inches of the eye, the reflection is not visible, for, before our eye can be brought within range of the reflected rays, the incident rays of light are excluded. On placing before the eye examined, a black card with an aperture the size of the iris, the intensity of the reflection was observed to be somewhat diminished.

"In cases in which the lens had been removed, the reflection was indistinct at a distance, but was rendered somewhat clearer by the aid of a double convex lens placed before the eye examined; but at two or three feet distant, the reflection was as obvious as in cases in which the lens was present.

"Among the cases I have examined, I have recorded indiscriminately the appearance of the luminosity in twenty persons with good and perfect vision, whose ages varied from a few months to sixty years. In sixteen cases the reflection was bright and very evident; in four, faint; and seen with difficulty; and in one it

was not seen at all ; in the last case, the pupils remained small in the shade. If these observations are confirmed by other observers, we may say that the reflection ought to be seen in every healthy eye with a good-sized pupil."

Having pointed out the character of this reflection, and the mode in which it may be seen, Mr. C. next inquires into its source.

"The retina in the living eye," he observes, "is a perfectly transparent medium in contact with the choroid and vitreous body. The transparency of the retina is, however, no proof that it does not itself reflect many of the rays of light that impinge upon it, although the greater proportion are transmitted; the transparency of a structure being quite consistent with considerable reflection, but not with absorption of the rays of light; and this reflection would be rendered more obvious by the position of the choroid. The formation of images upon the retina, acknowledged by all, is at once a proof of its reflecting power.

"From these considerations, and the fact of the anterior layer of the retina consisting of a vascular plexus, and thinking the choroid with its pigment too dark to give such a reflection, my first impression was that the retina was the reflecting surface.

"Mr. Bowman, however, having suggested to me the greater probability of the choroid with the pigment being the reflecting structure, I commenced some experiments to determine this point. The reddish-brown colour of the pigment of the human eye has been fully recognized. Mr. Hunter clearly and fully points out the varieties in the depth of tint of the pigment. Entirely or almost wanting in the Albino, it is of a light brown or fawn colour in fair persons, while in persons of swarthy complexion it is proportionably dark, appearing to keep pace with the depth of colour of the rete-mucosum; being still darker in mulattoes and negroes.

"The brilliancy of the luminosity of the healthy eye appears to be in proportion to the light colour of the pigment. So evident is the reflection in the Albino, that in ordinary day-light the pupils present a reddish appearance. On placing a middle-aged man, an Albino, ten or twelve feet from a gas-light, the reflection was extremely vivid, and of a pink colour than ordinary, while the light transmitted through the choroid and iris evidently increased the effect. On placing close to his eye a black card with an aperture a little larger than the pupil, the reflection was little brighter than that from the eye of a fair person examined side by side, but was of a more decided pink colour.

"In persons of fair complexion and blue or gray irides, it is generally more brilliant and more readily seen than in those of dark skin and irides. In the mulatto it is also dusky; but in them, as in persons of swarthy complexion, a silvery reflection is sometimes seen, and is, most probably, a reflection from the retina. In the Albino, this reflection produced by the vascular choroid, is most brilliant and lightest in tint, and, in proportion to the darkness of the pigment, its lustre is diminished, and the colour becomes more dusky.

"The posterior segment of an eye, the pigment being of the usual brown colour, was exposed to light concentrated by a lens upon it, and a brownish red reflection, of metallic lustre, was observed.

"I found, on holding an eye with the optic nerve towards the light, and looking through the pupil, that the light passing through the choroid was of a brilliant red colour, precisely resembling that reflected during life. I therefore obtained seven more eyes, each from a different subject, and found that the same red light was transmitted through the choroid. These cases, taken indiscriminately, leave no doubt that this is an appearance common to the human eye. Some months before my friend Mr. Dixon showed me an eye in which the same appearance was seen; at that time, however, we both supposed that this was an exception.

"This appears to me to be the best proof that the reflection is from the choroid with its pigment, viz., the exact resemblance of the rays transmitted through it to the reflection. But while I regard this as the principal reflecting structure, the light returned from the retina and concavity of the hyaloid body, would doubtless increase the effect.

"I have not yet seen the luminosity in the dead eye, but the non-injection of the choroid, and loss of transparency in the retina, sufficiently account for this.

"The reflection from these structures would be considerably increased in bril-

liancy, from the concentrating influence of the concave shape of the retina, and the focal distance of the lens.

"The establishment of the fact of a similar reflection from the healthy human eye to that from the eyes of animals, appears to me chiefly important in its adaptation as a mode of examining the posterior part of the eye. The retina and choroid hitherto concealed in the living eye, and little opportunity being afforded of examining their condition after life, in consequence of their diseases not terminating fatally, considerable uncertainty has attended the diseases ascribed to these structures; but the existence of this luminosity having been recognized, its non-existence, or abnormal appearance may enable us to detect changes in these structures heretofore unknown, or satisfactorily to see those which we only suspected. If we dilate the pupil by atropine, we have a means afforded of seeing the condition of the retina and choroid in every case. The cases I have examined in this way have confirmed the general impression that the retina is not frequently the seat of change in amaurosis; for, out of several cases of amaurosis, in which the non-opacity of the cornea, lens and humours allowed this mode of examination, I found but two in which the retina was so changed that the reflection was not seen."

MIDWIFERY.

51. *Effects of the Ergot of Rye on the Parturient female and her offspring.*—With the view of throwing some further light on the action and effect of the ergot, Dr. SAMUEL L. HARDY, of the Dublin Lying-in Hospital, has kept accurate notes of a large number of cases, in which this drug has been administered during parturition. Several of his observations are of considerable value.

Time at which the action of the ergot on the uterus commences.—From comparing tables which the author has drawn up, it appears that, in some cases, ergot acts on the uterus, so soon as seven minutes after its administration, whilst in others, a much longer period of time is required; but in the generality, from about ten to fifteen minutes may be stated as the average. In those cases where the children have been expelled alive, Dr. Hardy has always observed the action of ergot on the uterus, to commence within twenty-five minutes. On the other hand, when a longer period than this elapses before the uterus takes on action, the use of instruments has been necessary to perfect the delivery, or the children have been dead born. In some instances, the ergot has produced in the uterus a kind of tonic contraction, without any effective expelling pains. In accordance with what has been observed by others, the author has noticed that, in those cases where the ergot has acted beneficially, its exhibition is followed by strong expulsive pains, which gradually increase in frequency, so that, in fact, they may be said to run into each other, there being no distinct interval between them.

Effect on the pulse.—In nineteen cases of those which Dr. Hardy has recorded, there was a marked diminution in the frequency of the mother's pulse, following the administration of ergot, and this effect generally began to take place from about fifteen minutes to half an hour. In all these instances where the depression of the pulse occurred, the fœtal heart underwent a similar change. Hence the author is led to inquire, is ergot a safe remedy in a case where the woman is greatly reduced by hemorrhage arising from relaxation of the uterus after delivery? He mentions a case bearing upon this point, where a draining had continued for several hours after the expulsion of the placenta, by which the patient was greatly weakened; the usual dose of powdered ergot was given, and was followed almost immediately after, by most alarming depression, requiring the administration of the most powerful stimulants. In several of the cases the depressed state of the circulation continued for several days, notwithstanding, in some instances, inflammation of the uterus followed delivery; and the uterine tumour not unfrequently remained much larger than natural, even where there was no reason to suspect the presence of inflammation of that organ.

Effects of Ergot on the fœtal heart.—The effects of ergot on the fœtal heart, is still

more remarkable than on the maternal pulse, and, in a practical point of view, deserves a much more serious investigation.

In a great majority of the author's cases, a diminution in the foetal heart's pulsations followed the administration of ergot. The period at which this effect begins to be produced, varies from about fifteen minutes to half an hour, sometimes a little sooner, and occasionally at a later period. The most common effect, and usually the first the author has observed, is a diminution in the frequency of the pulsations; this is succeeded, after some time, by an irregularity in its beats, which irregularity continues, more or less, until the sounds intermit, and at length, after a variable period, become quite inaudible. Dr. Hardy has been led by his observations to the practical inference that, in those cases where the number of the foetal heart's pulsations have been steadily reduced below 110, and at the same time, *with intermissions*, the child will be rarely, if ever, saved, although its delivery should be effected with the greatest possible speed. But the mere depression of the foetal heart below 110, *without intermissions*, is not, in itself, sufficient to cause this result, as instances have occurred where the number of pulsations has been still more reduced, (in one case as low as 56,) and yet by speedy delivery, and adoption of the usual remedies, the children have been saved. But in none of these cases was there a *steady, distinct, and well-marked intermission*. The knowledge of these facts points out the necessity of watching closely the state of the foetal heart, after the administration of ergot, as delay beyond a particular time cannot be allowed with impunity to the life of the child. Should the case, in other respects, be eligible for the application of the forceps or vectis, in order to save the child, it must be had recourse to within a certain period, which can only be known by the careful use of the stethoscope. The author's observation fully coincides with those of Dr. Beatty, who fixes the limit beyond which the child will rarely be born alive, at two hours. To this rule he has met with but three exceptions. But death of the fetus may occur long before the expiration of two hours. In two instances, the children were lost, although only twenty minutes in one, and twenty-five in the other, had passed from the administration of the ergot to their expulsion. In these instances, the depressing effects of the ergot are so great, that frequently after birth, a considerable time elapses before the children can be perfectly restored; and Dr. Hardy has observed, that infants born in a weak state, where no ergot was given to cause their expulsion, have been restored to animation with much less difficulty, than in those cases in which this medicine was administered during labour. Hemorrhage after the birth of the child, is an occurrence the author has never met with in any case where the uterus was sensibly affected by the ergot during labour.

With some few exceptions, the women had generally good recoveries. Of those who were attacked with inflammation, all recovered but two. One was a case of retained placenta, where the hand was introduced; this patient died of uterine phlebitis. In the second, there was inflammation of the peritoneum and uterus.

The children who were born alive, all, with one exception, did well. In this case, delivery was effected by the forceps, as the foetal heart had fallen so low as 100 from the effect of the ergot. This statement refers only to those cases where complete restoration was accomplished after delivery.—*Dublin Journ. Med. Sci.*

52. *Prolapsus of the Cord terminating favourably without instrumental interference.*—Mr. WOODHOUSE mentioned to the Obstetric Society of Edinburgh (at the meeting 20th Jan.) a case of prolapsus of the cord, in which he had succeeded in saving the child by administering a large dose of ergot. The first stage of labour was almost fully over, when he detected the prolapsed cord. The pelvis was large and roomy, and the soft parts well relaxed. After failing to reduce the cord, he gave $\frac{3ii}$ of ergot, the pains at the time having got very feeble. They speedily became very active, and, after 20 minutes, the child was expelled alive.

Dr. Thompson stated, that in a case of twins, he found, on making an examination after the birth of the first child, that the cord of the second was prolapsed. He was considering what course he should pursue, when strong uterine contractions came on, and expelled the infant alive after a few pains.—*Monthly Journ. of Med. Sci.*, March, 1847.

53. *Spontaneous Amputation in a new-born Child.*—M. PAUL DUBOIS presented to the French Academy of Medicine, 16th March last, a child two days old, which presented remarkable and rare congenital lesions. Immediately after its birth, it was perceived that the middle and ring fingers of the left hand were reduced to the first phalanges; the free extremities of the latter were rounded, and covered over with skin, except at a small part, which still presented a wound, and showed the removal of the distal phalanges to have been recent. From alongside these small wounds, arose a slender but resisting filiform prolongation, larger than the wanting phalanges would have been, otherwise it might be considered as the remains of them.

A similar lesion existed in the second and third toes of the left, and also of the right foot. The last phalanges were wanting, and stumps replaced them, presenting central wounds and filiform appendages, as in the hand.

The left leg presented, a little above the malleoli, an obvious constriction, circular and straight, as though it had been produced by a ligature, but no vestige of such a thing was to be found. The great toe of the right foot offered, on a level with its first phalanx, a similar constriction. This alteration, and the removal of the toes, seemed to constitute two stages of the malady. Lastly, the right leg also presented a circular depression, having the same characters, and occupying the same position, as the constriction on the left leg, but much less marked. At the time of birth, no trace of inflammation existed around the mutilated parts; but since, and under the influence of the new conditions of external existence, a true inflammatory state had been set up.

The umbilical cord was but half its usual length; the membranes enclosing the child seemed to be constituted only by the chorion; at least, the amnion could not be distinguished. The placenta offered nothing remarkable. Setting aside the mutilations described, the child was well formed and fully developed.

The mother was not taken into the hospital until after the membranes had burst, and it was impossible to discover any trace of the deficient members.—*Lancet*, April 17, 1847.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

54. *Effects of the Vapours of Phosphorus on Workmen.*—M. CHEVALIER, on the presentation of a communication from M. Dupasquier, on the manufacture of chemical matches, and the action of the vapour of phosphorus, took occasion to remark, that in concert with Dr. Bricheteau and Boys de Loury, he had been engaged in an inquiry as to the condition of workmen thus employed, and had particularly consulted several manufacturers of phosphorus.

The results thus obtained, and which date back as far as the 16th of March, 1846, are as follows: 1. That workmen engaged in the manufacture of phosphorus are not subject to the caries of the teeth which has been noticed in those engaged in making matches. 2. That these workmen, when the rooms are filled with the vapours of phosphorus, are seized with cough, but it disappears with the removal of the cause. 3. That the manufacture of phosphorus does not give rise to any particular disease.—*Comptes Rendus*, Sept. 28, 1846. T. R. B.

55. *Nicotine.*—M. SCHLOESING, a pupil of the "*Manufacture des Tabacs de Paris*," after stating the best mode of obtaining this substance, mentions the quantity of it contained in the tobacco of France and America.

Tobacco of

Lot contains 7.96 in the 100 parts of Tobacco dried; Lot and Garonne, 7.34; Nord, 6.58; Ille et Vilaine, 6.29; Pas de Calais, 4.94; Alsace, 3.21; Virginia, 6.87; Kentucky, 6.09; Maryland, 2.29; Havana, less than 2 per cent.

It would appear from this table, that the kinds which contain most nicotine, are best adapted for the manufacture of snuff.

When tobacco in powder (snuff) is examined, it indicates a material loss of nicotine. The proportion is 2.04 in the 100 parts, showing that fermentation of the leaves has destroyed about two-thirds of it.

Ammonia exists in snuff in the form of a salt; nicotine partly in the state of a salt and partly free, or entirely a sub-salt. It is to these two salts, that the property of *super exciting the mucous membrane of the nose* is to be ascribed.

M. Schloesing will continue his investigations.—*Comptes Rendus*, December 21, 1846. T. R. B.

56. *Poisoning in Java. The Gecko.* (From Selberg's *Travels in Java*.)—The Javan women are of an extremely jealous disposition, and have quiet and subtle means of revenging themselves upon their rivals. They are skilled in the preparation of poisons—of one especially, which kills slowly, occasioning symptoms similar to those of consumption. When a Javan perceives this, she submits herself to her fate, knowing well what is the matter with her, and rejecting antidotes as useless. And European physicians have as yet done little against the effects of the poison, whose ingredients they cannot discover with sufficient accuracy to counteract them. A medical man told Dr. Selberg that copper dust and human hair were amongst them, combined with other substances entirely unknown to him. The dose is usually administered in rice, the chief food of the Javans. Arsenic, another poison in common use, is sold in all the bazaars. This poisoning practice is not unusual among Liplap women married to Europeans, and who, although nominally Christians, possess for the most part, all the vices and superstitions of their Mahometan sisters.

While traveling in the Island of Madura, Dr. Selberg was seized with sudden and violent fever. He was kindly treated by his host, who on leaving at night, placed an open cocoa nut by his bed-side, a simple, but delightful fever draught. Awaking with a parched tongue and burning thirst, he sought the nut, but it was empty. The next night, the same thing occurred, and he could not imagine who stole his milk. He ordered two nuts and a light to be left near him; towards midnight, a slight noise attracted his attention, and he saw two small beasts cautiously and steadily approach, stare at him with their protruding eyes, and then dip their ugly snouts into his cocoa nuts. These free and easy vermin were *Geckos*, a species of lizard, about a foot long, of a pale grayish-green colour, spotted with red, having a large mouth full of sharp teeth, a long tail marked with white rings and sharp claws upon their feet. Between these claws, by which they cling to whatever they touch, is a *venomous secretion that distils into the wounds they make*. Dr. Selberg was well acquainted with these comely creatures, and had even bottled a couple, which now grace the shelves of a German Museum, but in his then feeble and half delirious state, their presence intimidated him, and fancying that if he disturbed their repast, they might transfer their attentions to himself, he allowed them to swill at leisure, until an accidental noise scared them away.—*Blackwood's Magazine*, March 1847. T. R. B.

57. *Remarkable English State Trials.*—Lord Campbell has recently published two additional volumes of his "Lives of the Lord Chancellors of England," and in the course of his biographies, frequently speaks of the Trials in which these eminent men were engaged, previous to arriving at their high stations. Some of these are constantly noticed in our works on Medical Jurisprudence, and it is of some interest to know the opinion entertained by so eminent a lawyer concerning them. I quote a few scraps.

58. *Trial of Earl Ferrers before the House of Lords for murdering his steward.*—He was condemned by the unanimous verdict of his peers, and executed. Lord Campbell remarks (vol. v. p. 195), "Were such a case now to come before a jury, there would probably be an acquittal on the ground of *insanity*, although the noble culprit was actuated by deep malice towards the deceased, although he had contrived the opportunity of satiating his vengeance with much premeditation and art, and although the steps which he afterwards took showed that he was fully sensible of the magnitude and the consequences of his crime."

Charles Yorke was Solicitor-General at this time, and along with Pratt, Attorney General (afterwards Lord Camden), was the public prosecutor. Lord Campbell says (vol. v. p. 398), "The Solicitor-General's reply on this occasion was one of the finest forensic displays in our language, containing along with touching elo-

quence, fine philosophical reasoning on mental diseases and moral responsibility. 'In some sense' said he, 'every violation of duty proceeds from insanity. All cruelty, all brutality, all revenge, all injustice, is insanity. There were philosophers in ancient times, who held this opinion as a strict maxim of their sect, and, my lords, the opinion is right in philosophy, but dangerous in judicature. It may have a useful and a noble influence to regulate the conduct of men to control their impotent passions, to teach them that virtue is the perfection of reason, as reason itself is the perfection of human nature, but not to extenuate crimes, nor to excuse those punishments which the law adjudges to be their due.' "

59. *The Douglas Cause.* (Vol. v. p. 290.)—"I believe the general opinion of English lawyers was in favour of the decision of the Court of Session in Scotland, but this was produced a great deal by Lord Mansfield's wretched argument and the very able letters of Andrew Stuart, the Duke of Hamilton's agent, whose conduct had been severely reflected upon. I once studied the case very attentively, and I must own that I came to the conclusion that the House of Lords did well in *reversing*. There was undoubtedly false evidence in support of the appellant, but it would have been too much in such a case to act upon the maxim 'false in one thing, false in all things,' so as to deprive him of his birthright from misconduct to which he was not privy. There seems to be no doubt that the Lady Jane, notwithstanding her advanced age, subsequently to the birth of the appellant, was pregnant and had a miscarriage; and insuperable difficulties attended the theory of his being the son of Madame Mignon. Being in possession of his *status*, I think the evidence was insufficient to deprive him of it, and the strong family likeness satisfactorily established, seems to prove that the conclusion of law concurred with the fact of his physical origin."

60. *Miss Blandy for poisoning her father.* (Vol. v. p. 442.)—"There was a verdict of guilty on the clearest proof of premeditation and design; but to show the worthlessness of dying declarations of criminals, and the absurdity of the practice of trying to induce them to confess, she went out of the world with a solemn declaration which she signed and repeated at the gallows, that she had no intention of injuring her father, and that she thought the powder would make him love her, and give his consent to her union with Captain Cranstoun."

61. *Trial of Spencer Cowper for the murder of Miss Stout.* (Vol. iv. p. 275.)—This case occupied my attention some years since, for many days. I had nothing before me but the report of the trial and the comments on it, in Hargrave's State Trials, and I confess that the result on my mind has, in consequence of the apparent mystery and numerous circumstances unexplained, always been unfavourable to the characters, at least, of Mr. Cowper. At the same time I could find no satisfactory proofs negating the idea of suicide. Lord Campbell's account clears up the matter.

I beg those, who may take any interest in this remarkable trial, to read what I have stated in my work on Medical Jurisprudence, and the following will then be readily understood.

William Cowper (afterwards Lord Chancellor of England) and Spencer Cowper were the sons of Sir William Cowper, and natives of Hertford. At the time in question, William was already King's counsel, and he and his brother went the usual circuits, and of course, their native place was one of the county towns visited by them. Sir William and his eldest son were also both members of parliament for Hertford, and Spencer was thus under the necessity, says Lord Campbell, of showing, for the sake of the family interest in that borough, very marked attention to the electors, and their wives and daughters.

"Mr. Stout, the Quaker, had died since the last election, leaving his widow and an only child, an unmarried daughter, named Sarah, in affluent circumstances. The Cowpers still kindly took great notice of them, visited them at Hertford and invited them to the house of Sir William, in Hatton Garden. Spencer Cowper had been particularly serviceable to Mrs. Sarah, (as she was called,) in managing her pecuniary affairs, and although she was a very handsome young Quakeress and rather of a romantic turn, it seems now quite certain that he never made her any

improper overtures, or at all encouraged a fatal passion which she cherished for him."

After mentioning the finding of her body next morning in the river that flows through the town, and the fact that Spencer Cowper was the last person seen in her company the night before, our author adds, that suspicion fell upon him, but he appeared as a witness before the Coroner's jury and so far cleared himself, that they brought in a verdict that "she had drowned herself, being *non compos mentis*."

Two parties, however, were at work, from very opposite motives, planning measures which nearly brought him to the gibbet. An unfounded rumour was spread that she was pregnant and that she had made way with herself to conceal her shame. The Quakers, with Mead at their head, thought that such an imputation brought disgrace upon the whole of their society, and the body was disinterred several weeks after it had been in the grave. It was proved that she had died a virgin. The transition from this to the charge of murder against Spencer Cowper was a ready one, and the political opponents of the family eagerly seized upon it as a means of destroying the whig influence in the borough.

Cowper was accordingly committed to prison and afterwards tried for his life. Not being (as was then the practice and may be still) allowed any counsel, he made his own defence. He proved from the testimony of his brother William and his wife, and other witnesses of undoubted credit, that Miss Stout, *although he was a married man*, had conceived an uncontrollable passion for him, which he in vain had attempted to repress; that when in London, she wrote to him she was coming to visit him at his chambers in the temple, that he communicated this in confidence to his brother, and they agreed that as she was to dine that day with their father in Hatton Garden, William should say, that Spencer had gone into the country on business; that she had solicited him to lodge at her mother's house during the assizes, which he had declined; that on the 9th of March (five days before her death) she wrote him a letter, in which she plainly proposed that they should live together, adding this expression, "for come life, come death, I am resolved never to desert you, therefore, according to your appointment, I shall expect you." (Mr. and Mrs. William Cowper mentioned, on their examination, her frequent fits of despondency, her repeated expression of her wish to be rid of life, and of prognostications she had uttered of her approaching death.)

That on the day and evening in question, after engaging lodgings, he had visited her and heard her give the maid orders to prepare a bed for him, but as soon as she left the room, he positively refused to sleep there and immediately left the house. Mr. Cowper proved also in the clearest manner, that before the clock struck eleven, he had returned to his lodgings, and that he never went out again until next morning, after news of the catastrophe that had happened had been spread over the town.

An attempt was afterwards made to bring him again to trial, by the process called "an appeal of murder," sued out in the name of the heir at law of Sarah Stout. "There were various hearings on the subject, before Lord Keeper Wright, who called to his assistance the Master of the Rolls, Lord Chief Justice Treby, Lord Chief Baron Ward, and Mr. Justice Powell. William Cowper attended as counsel for his brother, and argued the case for him with great talent, his energy being stimulated, not subdued by the anxiety which he felt. No misgiving was ever felt by him, for a moment, respecting Spencer's innocence, but considering the perverted and infuriated state of the public mind, it was of the highest importance that the risk of a mistaken verdict should not be again run. Upon a capital conviction in this form of proceeding, the crown has no power to pardon. On account of an informality, the first appeal was quashed, and the lord-keeper, with the unanimous concurrence of his assessors, refused to issue a writ for another."

The strongest proof in favour of the general impression of his innocence is that some years afterwards, Mr. Spencer Cowper was made a judge of the court of Common Pleas.

62. *Coke and Woodburn Case*. (Vol. iv. p. 601.)—Lord Campbell does not admire the dicta of Lord Chief Justice King in this case. "Although substantial justice was done, and the decision has been since recognized, I must confess that it seems to me, that the law was rather strained." Arundel Coke Esq., a gentleman

of fortune in the county of Suffolk, and John Woodburn, his servant, were capitally indicted under the coventry act, (which enacts that if any person of malice aforethought, and by lying in wait, shall unlawfully slit the nose, &c., with intent to maim or disfigure, he shall be guilty of felony without benefit of clergy) for slitting the nose of Edward Crispe, Esq., Coke's brother-in-law, "with intent to maim and disfigure him." It appeared in evidence, that Mrs. Coke was entitled to a large estate, on the death of her brother, Mr. Crispe: that Mr. Coke, to get possession of this estate, resolved to murder Mr. Crispe; that with this view he inveigled Mr. Crispe at midnight into a churchyard, that there Woodburn, by Mr. Coke's orders, assaulted Mr. Crispe with a bill-hook, and gave him several wounds which were believed to be mortal; that he was left for dead in the churchyard, that he was nevertheless carried by some countrymen passing by to Mr. Coke's house, which was close by; that he recovered; and that one of the wounds he received was a cut across the nose.

The prisoners being called upon for their defence, Coke boldly contended that this case did not come within the Coventry Act. "This act, as was well known from its history and as was apparent from its terms, was meant to apply to the outrage of maiming or disfiguring a man when there was no intention of depriving of life, but who was afterwards, to gratify the malice of an enemy by carrying about with him, and exhibiting in society, the mark of disgrace set upon his person. The attempt to put a fellow creature to death might morally be a higher crime, but not being the crime described in the statute, it remained as at common law, only an aggravated misdemeanor, to be punished by fine and imprisonment. The legislature might hereafter be called upon to make such an attempt a capital offence, but a court of justice could not properly extend it to a statute passed entirely *alio intuitu*. Now here there clearly was no intent that Mr. Crispe should live ridiculous with a mutilated visage; the intention was not to disfigure, but to murder him for his estate; the wound which merely cut the nose was intended, like others inflicted on different parts of his body, to be mortal, and both the accused persons, when they left him in the churchyard, believed that their real object had been fully accomplished."

Lord Chief Justice King, however, ruled that if the prisoners maliciously inflicted a wound which amounted to a slitting of the nose and which disfigured the prosecutor, the case was within the act, although the real object was to murder, not to disfigure; saying among other things, "There are cases in which an unlawful or felonious intent to do one act may be carried over to another act done in prosecution thereof, and such other act will be felony, because done in prosecution of an unlawful or felonious intent. Here, although the ultimate intention was to murder, there might be an intermediate intention to disfigure, and one might take effect, while the others did not. An intention to kill does not exclude an intention to disfigure. The instrument made use of in this attempt, was a bill or hedging hook, which in its own nature is proper for cutting, maiming, or disfiguring." The means made use of to effect the murder must be considered, and the jury will say whether every blow and cut, and the consequences thereof, were not intended, as well as the end for which it is alleged these blows and cuts were given."

The prisoners were convicted and executed, but the case (says Lord Campbell) may be regarded as a pendant to that before Lord Chief Justice, Sir James Mansfield, where a man who gave a horse a draught for the purpose of fraudulently winning a wager on a race, was hanged for killing the horse, "out of malice to the owner," whose name he did not know.

63. *Unborn Child recognized by the law, so that estate may vest in it.*—The following decision of Lord Macclesfield, while Chancellor, is quoted by Lord Campbell (vol. iv., p. 524).

An ancestor of the late Sir Francis Burdett devised his estates, "in case he should leave no son at the time of his death," to his cousin Frances Hopegood, and died leaving his wife pregnant without his knowledge. She gave birth to a son, and the question was, which should have the estates? the devisee contending that the testator *left no son at the time of his death*, as it was then doubtful whether any child would be born of the widow and what the sex might be, so that the estates vested in the devisee and could not be divested by the son's subsequent birth.

But Lord Macclesfield, after consulting the Judges of the Court of Common Pleas, held that the infant, Sir Robert Burdett, though not actually born at the death of his father, yet in the eye of the law had existence in his mother's womb (*ventre sa mere*); as if a pregnant woman takes poison to kill her child and the child being born alive, dies of the poison, she is guilty of murder; an unborn child, therefore, may take as heir or devisee, and here it could not be imagined that the testator ever intended to disinherit his own son. So the estate remained with the Burdetts."

(This case is reported in 1 Peere Williams. *Sir Robert Burdett v. Hopegood*.) There is a somewhat similar one in *Pickering's Massachusetts Reports*, vol. xv. See *American Journal Med. Sciences*, New Series, vol. i., p. 253. T. R. B.

64. *Solium Temulentum*, by Professor PFAFF. (*Buchner's Repertorium*).—The seeds of Daruel were examined, in order to discover the alkaloid on which its poisonous qualities have been supposed to depend. No trace of it, however, could be found. By distillation with water, two kinds of ethereal oil were obtained; one specifically lighter, and the other specifically heavier than water, of a colour like clear water, and possessing a striking smell of the fusel oil of spirit.—*Pharmaceutical Journal*, October 1846. T. R. B.

65. *Death from taking Ammonia*.—Mr. Daniel Brough, a commercial traveller, had been drinking to excess, and upon his arrival at the Golden Ball, King street, where he lodged, he was followed into the parlour by two men, one of whom assaulted, and, it is said, robbed him. A Mr. Southwood, seeing Mr. Brough's sufferings from intoxication aggravated by the assault, went out and procured some liquid ammonia, in order to relieve him. Mr. Brough took some, and immediately exclaimed that his throat was on fire. He died that night. At the coroner's inquest, Mr. Harris, a chemist, said he sold Mr. Southwood four fluidrachms of liquor ammoniæ, that is, about four teaspoonfuls, that Mr. Southwood asked for the strongest and he gave it to him, believing that he wanted it for chemical purposes, and not to use as a medicine; ten or fifteen drops of another kind of ammonia, might have been beneficially administered to a drunken man. Dr. Lynch said the deceased died from inflammation of the epiglottis, caused by the ammonia, a strong caustic, passing over it. The verdict of the jury was, "Died from the effects of ammonia, administered in ignorance of the consequences."—*Atlas*, (*London newspaper*,) Feb. 13, 1847. T. R. B.

66. *Poisoning with Arsenic in Cayenne*.—I notice the following, simply to show the attention and care that is bestowed by the French authorities to obtain the highest possible evidence in cases of this description.

A negress, the mother of nine illegitimate children by a white individual, and with whom she had lived during twenty-five years, became unfaithful to him during his temporary absence. She was delivered of a child, called, in the language of the colonies, *capre*, i. e., the issue of a negress and a very dark mulatto, and she confessed to the midwife, that it was the product of a connection with a slave. The labour was painful, and the child, when born, quite feeble, but it had perfectly recovered when the midwife left. Two days after, she again visited the negress, and found the child violently convulsed, and apparently suffering much. It had vomited during the night after birth. Death soon followed, and it was buried the next day.

Suspicious of poisoning were soon excited. The body was disinterred, and the fluids found in the stomach were submitted to the examination of several medical men in the colony, but they declared themselves unable, with the means in their power, to state that poison had been employed.

Meanwhile, the house was searched; powders were found; the linen stained with meconium, was also procured, with other matters. Having now obtained the apparatus of Marsh, the physicians tested the suspected substances with it, and found, in all and every one, including the fluids of the stomach, proofs of the presence of large quantities of arsenic.

The judge, however, in consequence of the uncertainty of the first report, determined to forward a portion of the suspected matter to Paris, for further investi-

gation, and a commission, consisting of Chevalier, Bois de Loury, and Flandin, were appointed to make the examination. They reported that the animal matter obtained from the carbonization of the liver, heart, lungs and kidneys, contained a large proportion of arsenic; so also, with the intestines and the fluids in them, and also with the meconium.

The result of the trial is not given.—*Gazette des Tribunaux*, December 2, 1846.
T. R. B.

67. *Softening of the Mucous Membrane of the Stomach.* (Review of Dr. Gross' Elements of Pathological Anatomy.)—"In turning over the writer's chapter on post-mortem softening of the mucous membrane of the stomach, our attention is attracted by two statements; first, it is not correct to affirm that Louis regards this state as one produced during life, and 'caused by a high state of inflammatory irritation.' He *did* once so regard it, no doubt, but in the second edition of his work on typhoid fever, (published so far back as 1840,) he distinctly renounced his error, and made due acknowledgement of the truth of Dr. Carswell's notions. Secondly, (and this is much more important,) Dr. Gross states that 'if the gastric juice be neutralized by a small quantity of magnesia, no softening, whatever, will happen in the stomach of an animal that has just been killed,' and this statement is of, at the least, excessively doubtful accuracy. We are well aware that the proposition is Dr. Carswell's, but it was the business of Dr. Gross to show that others (Drs. Simpson and Imlach) have found that neutralization of the acid does *not* prevent solution. Admitting this, the admission by no means throws any shadow of doubt on the general truth of the idea, of the cadaveric nature of the change, but it constrains us to look for the solvent agent in some other element of the gastric secretion, besides its acid or acids."—*British and Foreign Medical Review*, January 1846.
T. R. B.

68. *Formation of Alcohol in the system?*—"MITSCHERLICH has given it as his opinion, that the sugar swallowed by animals may be converted into alcohol, in the intestines or vessels into which the absorbed food passes. The possibility of this change, it is true, cannot be denied, but there is one objection to the probability of the alcohol remaining for any length of time in this form in the body, that the temperature of an animal would immediately tend to convert it into acetic acid. There is a curious fact which we have met with, and which would appear to corroborate the suspicion of Mitscherlich; it is a circumstance, related in a note by the late Dr. Oudney, in his African travels. 'Several of our camels are drunk to-day; their eyes are heavy and want animation; gait staggering, and every now and then falling, as a man in a state of intoxication. It arose from eating dates after drinking water; these probably pass into the spirituous fermentation in the stomach.'"—*Ibid.*, in the *Review on the Food of Animals*.
T. R. B.

69. *Coffee as an antidote to Acetate of Morphia.* (*Journal de Pharmacie*, February, 1847.)—An invalid took at one dose, ten grains and nearly eight-tenths of acetate of morphia; thirty grains of emetic tartar were exhibited without occasioning vomiting; after a lapse of three hours, and not till then, and when the patient was perfectly comatose, a strong infusion of coffee with the grounds was given. In the course of twelve hours, the invalid took about eleven and a half ounces of coffee; the coma ceased, and he recovered.

This fact proves, among a hundred others, that even in the worst cases of poisoning, the medical man should never despair of the recovery of his patient. In the above described case, in spite of a very strong dose of poison, and notwithstanding the absence of all assistance during three entire hours, and although it was impossible to evacuate any portion of the morphia, the patient recovered. If a similar accident should again occur, vomiting should be immediately attempted; if this fail, the stomach pump should be employed, and then, concentrated coffee should be administered.—*London, Edinburgh, and Dublin Philosophical Magazine*, April 1847.
T. R. B.

70. *On the Changes effected in Hydrated Peroxide of Iron when kept in water.* By M. G. C. WITTSTEIN. (*Journal de Pharmacie*, February 1847.)—It is well known, that

a solution of persulphate or perchloride of iron, gives a reddish-brown precipitate with ammonia; it is flocculent and very bulky, and dissolves perfectly in cold acetic acid. It does not, however, appear to be known, that this precipitate, when kept under water, and without having been previously dried, almost entirely loses its property of dissolving in acetic acid, as if it had been dried. Some other organic acids, which readily and completely dissolve recently precipitated peroxide of iron, such as tartaric and citric acids, &c., also dissolve a much smaller quantity of the oxide which has been kept under water. M. Wittstein states that some researches which he has made on this subject, have afforded him very satisfactory results.

If the recently precipitated and washed oxide be examined by the microscope, it will be seen to be composed of amorphous globules, among which no crystals are perceptible; on the contrary, the precipitate which has been long kept under water, appears to be entirely crystalline; the small fragments of crystal are of a deep yellow colour, and slightly translucent. The author states that he is not aware of the time required to convert the amorphous into the crystalline peroxide; but the precipitates on which he made his experiments, had been prepared more than two years previously. He thinks, however, that the transformation had taken place for a considerable time; for he remembers to have remarked that in six months the precipitate had altered its appearance, and become more compact. The hydrate, moreover, in assuming the crystalline form, loses half the water which it contains.

The difficulty, then, which attends the solution of hydrated peroxide of iron that has been long kept under water, depends upon two causes, the crystalline form and partial dehydration. It results from what has been above stated, that the peroxide of iron, in order that it may be dissolved by the acids named, and weak acids in general, ought to be employed soon after precipitation. It is probably not indifferent that the peroxide of iron employed as an antidote to arsenic, should be recently precipitated; at all events, preference should be given to recently precipitated oxide, and it will be proper to renew it every six months, or annually. It is not requisite, entirely to reject the hydrate which has been kept; it may be dissolved in hydrochloric acid, and again precipitated by ammonia. *Ibid.*

T. R. B.

71. *Datura Sanguinea*, (R. Pav.)—To this, the natives give the names *Huacacahu*, *Yerba de Huaca* or *Borachero*, and they prepare from its fruit a very powerful narcotic drink called *tonga*. The Indians believe that by drinking the *tonga* they are brought into communication with the spirits of their forefathers. I once had an opportunity of observing an Indian under the influence of this drink. Shortly after having swallowed the beverage he fell into a heavy stupor; he sat with his eyes vacantly fixed on the ground, his mouth convulsively closed, and his nostrils dilated. In the course of about a quarter of an hour his eyes began to roll, foam issued from his half-opened lips, and his whole body was agitated by frightful convulsions. These violent symptoms having subsided, a profound sleep of several hours succeeded. In the evening I again saw this Indian. He was relating to a circle of attentive listeners the particulars of his vision, during which, he alleged, he had held communication with the spirits of his forefathers. He appeared very weak and exhausted.

In former times the Indian sorcerers, when they pretended to transport themselves into the presence of their deities, drank the juice of the thorn-apple in order to work themselves into a state of ecstasy. Though the establishment of Christianity has weaned the Indians from their idolatry, yet it has not banished their old superstitions. They still believe that they can hold communications with the spirits of their ancestors, and that they can obtain from them a clue to the treasures concealed in the *huacas* or graves; hence, the Indian name of the thorn-apple—*huacacachu*, or grave plant.—*Tschudi's Travels in Peru*, American Edition, p. 188.

T. R. B.

72. *Poisoned Weapons of the Peruvian Indians*.—Among many Indians, particularly in the western and northern districts of the Pampa del Sacramento, the *Pocuna* is a weapon much used in hunting. It is made of a long reed, and measures eight

or ten or even more feet. At one end are fixed two teeth of a javeli or white-lipped peccary, on which the reed is rested when taking aim. The arrows, which are only one and a half or two inches long, are made of the thick part of a strong cactus stem. In general their small arrows are poisoned, for otherwise the wound would be too inconsiderable to kill even a little bird. The poison for arrows differs with almost every tribe, and very mysterious ceremonies are observed at its preparation. On this account the art of preparing it and the ingredients employed are only very partially known to Europeans. Their elements are obtained from several plants not yet defined botanically, among which the *Apihuasca* and poison capsicum are much resorted to. Infusions of the leaves of a very strong kind of tobacco and of the Sanano and of Euphorbiaceæ are also taken. Some modern travellers, contrary to the testimony of the oldest writers on Peru, have asserted that no animal substance is employed in the poison for arrows. I am, however, enabled to state, on the authority of an Indian who has himself often made the poison, that not only the black and very poisonous emmet (*Cryptalereo atrato affin*) but also the teeth of the formidable serpent known to the Indians by the name of Minumaru or Jergon (*Lachesis picta*) are used for that purpose.

The wound of the poisoned arrow is fatal and rapid. Men and large mammalia die in about four or five minutes after receiving the wound; the smaller mammiferous animals and birds in two minutes. The blow-reed sends these deadly arrows with great certainty to the distance of thirty-two or thirty-six paces. Hunting with the blow-reed must be long practised in order to acquire dexterity in its use, and great caution is required to avoid being self wounded by the small sharp arrows. An example came to my knowledge in the case of an Indian who let an arrow fall unobserved from his quiver; he trod upon it and it penetrated the sole of his foot; in a very short time he was a corpse. *Ibid.*, p. 285. T. R. B.

73. *Infanticide in Madagascar.* (From Madagascar, Past and Present. By a Resident.)—Infanticide of the most atrocious character pervades the land. "The contrivances resorted to for the destruction of infants, when once doomed by the astrologers to die, are not the least atrocious features distinguishing this dark page in the history of the people under our notice. Thus a common *modus operandi* for the attainment of this end is that of exposing the unconscious babe in a narrow passage, through which a herd of cattle is furiously driven, and by the feet of which it is scarcely possible to avoid being mangled and tortured by a gradual death; at other times it is suspended by the heels, whilst its face is held downwards in a pan of water until suffocation ensues; or, still more horrible to relate, it is sometimes buried alive, with the head downwards, in a pit especially dug for the occasion. And this atrocious murder is in regular order commanded under the Queen's authority to be perpetrated by the father or nearest relative of the infant."—*London Literary Gazette*. T. R. B.

74. *Amussant on the Effects of the Inhalation of Ether on animals and man.*—The phenomena produced by the inhalation are the same on animals as on man. They exhibit all the marks of intoxication; they fall without the power of raising themselves, become insensible to all operations performed on them, and either recover soon when the experiment ceases, or sink if it be prolonged.

The arterial blood, instead of being red, is found nearly black, analogous to venous, but this change only occurs at an advanced stage of inhalation. As soon as the breathing of it is stopped, the arterial blood resumes its natural colour.

If the animal dies the blood is black and limpid. Flandin analyzed it immediately after death and detected the presence of ether. (During life it was impossible to inflame the expired gases.) The muscles also, when divided at an advanced stage of the inhalation, retracted but little, while the flesh itself was observed to have somewhat lost its colour.

The internal viscera were generally congested. The heart is greatly distended, resembling that of animals who die from the accidental introduction of air into the veins. The right auricle and ventricle contain a large quantity of black limpid blood. The lungs are of a deep red and their parenchyma of a similar colour. The liver is gorged with black blood, the kidneys are violet from the quantity of blood in them. The spleen, on the other hand, is of its ordinary size. The vessels

of the dura mater are full and the pia mater is quite injected. The cerebral pulp is generally natural, but the cerebro-spinal fluid appeared to be less abundant than in the natural state.

The lesions, viewed together, appear to Amussat to indicate that death is attributable to a species of asphyxia caused by the penetration of the ether into the blood, or as he expresses it in a subsequent note, that the venous blood is thus prevented from becoming red.—*Comptes Rendus*, Feb. 22, 1847. T. R. B.

75. *Feigned Diseases detected through the inhalation of ether.*—The conscripts in France are still ingenious in feigning diseases in order to escape from military duty. M. BAUDENS stated two instances, one of simulated and the other of real infirmity, in which the inhalation of ether was the DETECTING agent.

A soldier of the 25th regiment, who had been in service for eighteen months, presented himself with an apparently severe spinal disease. The back was bent almost in the form of a semi-circle, and when placed on a table, in the recumbent posture, the lumbar region was the only part that touched it. Possibly by allowing him to remain a sufficient length of time in this state, the contractility might have yielded, but M. Baudens forbade that he should be handled, and even directed a bolster to be placed under his head, as a means of support against fatigue.

In four minutes after inhaling the ether insensibility came on, and to this soon succeeded a complete relaxation of the limbs. The bolster was gently withdrawn, and the head, neck, shoulders and back in regular succession descended in close contact with the table by their own weight, so that he lay, in the words of the reporter, *a-plomb*. The deceit was manifest.

In the second case, a new recruit applied for a discharge on the ground of having a complete ankylosis of the coxo-femoral articulation of the left side. On moving the limb there was a spontaneous contraction which seemed to be voluntary, and this caused suspicion. The patient readily submitted to the test of the ether. In five minutes symptoms of somnolency began to show themselves, and in eight the insensibility was complete, but the contraction still continued, nor was there a complete relaxation of the muscular system until at the end of twelve minutes. On moving the limb at this time, the fact of a complete ankylosis was perfectly established. It was, in fact, perfectly impossible to make any motion with the femur, without embracing that of the whole pelvis. No question remained as to the propriety of discharging this person.—*Comptes Rendus*, March 8, 1847.

T. R. B.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Symblepharon successfully treated by plastic operation. By I. HAYS, M. D., Surgeon to Wills' Hospital, &c.

Philip Kline, farmer, forty-six years of age, was admitted into Wills' Hospital, August 30th, 1843, with adhesion of the lower lid of the right eye, at its inner portion, to the eyeball. He stated that this adhesion had followed an operation for the removal of a pterygium, performed about eight years since. The band of adhesion was short, and greatly impeded the movements of the eye, rotation outwards being impossible.

On the 1st of Sept., with the assistance of my colleagues, Drs. Littel, Parrish, and Fox, and the house surgeon, Dr. Burwell, I operated in the following manner:

The patient being placed on his back on the operating table, and the lower lid depressed by an assistant, I raised the upper lid with my left hand, and with the right, passed a probe at the external side of the band, down to the point of reflection of the conjunctiva, pressed the point inwards so as to make it prominent, and drew the lid from the eyeball. Confiding this probe then, to the assistant, with scissors I divided the whole extent of the band. The incision left a triangular space, the base of which was at the edge of the lid, uncovered by conjunctiva. With a very fine sewing needle, slightly bent, armed with fine silk, I then passed three ligatures through the edges of the conjunctiva, one near the apex, a second at the base, and the third at the middle portion of the wound; the ligatures were then drawn tight—by which the conjunctiva was brought into complete coaptation—tied and cut off close to the knot. Cold flaxseed mucilage was ordered as a dressing to the eye; a dose of salts at night, and an antiphlogistic diet. Union promptly took place, and in a few days the ligatures were removed. A weak solution of sulphate of copper was then directed as a collyrium. Under this treatment, the enlarged vessels contracted, the mass left adhering to the eyeball was diminished by absorption, and the patient was discharged on the 4th Nov., with the recovery of perfect freedom of motion of the eyeball.

The patient had also a pterygium at the inner angle of the left eye, which I removed in the usual manner on the 17th of Oct., and from which he had satisfactorily recovered when discharged.

Treatment of Acute Articular Rheumatism by cold applications to the affected joints, with opium and quinine at night. By W. S. W. RUSCHENBERGER, M. D., Surgeon U. S. Navy.

[Extract from a paper, accompanying Surgeon Ruschenberger's quarterly report of diseases and injuries, at the Naval Hospital, New York. Communicated by THOMAS HARRIS, M. D., Chief Bureau of Medicine and Surgery, U. S. Navy.]

"In a case of acute rheumatism, complicated with nodes on the shins

and syphilis, an ineffectual attempt to obtain the specific effects of mercury had been made in the commencement of the case. When in health, the patient weighed 220 pounds. He had been confined to bed four months, and when admitted was unable to bend the knee, wrist, elbow, or finger-joints, without great pain. Cold water dressings were kept constantly applied to the painful joints, half diet was allowed, and he took at bed time, every night, two pills, composed of four grains of opium, and four grains of sulphate of quinine. On the tenth day of treatment he left his bed. His weight was 136 pounds. At the expiration of twenty days the pain had disappeared; the quinine and opium were discontinued. There still remained thickening and stiffness about the joints. For this condition phosphoric acid in syrup of prunus virginiana was prescribed, as follows: R.—Sol. acid phosphoric ʒij; syrup pruni verg. q. s.; ft. ʒviiij. M. cap. ʒss in aq. font. ʒiv, q. q. 4ta hora. Under this treatment the functions of the joints were perfectly restored and the patient gained twenty pounds in weight in thirty days, and the nodes disappeared.

“While taking the quinine and opium the bowels, which had been previously constipated, were regularly moved once in twenty-four hours; but under the use of phosphoric acid, it was found necessary to occasionally prescribe castor-oil, and anodyne at night.

“I have been in the habit of treating acute rheumatism, upwards of two years, by cold applications to the hot and swollen joints, and administering at night from three to six grains of opium, with an equal quantity of sulphate of quinine, regulating the quantity by the condition of the pupil alone. With a dilated pupil, I found patients to bear the largest dose without inconvenience, and I have not yet met a single case in which pain was not completely removed in from twenty-four to thirty-six hours, provided the attack were recent, or of not more than a week's duration. Large doses of opium, especially in combination with sulphate of quinine, do not tend to constipate, but rather to relax the bowels. After the pain is removed by the opium, I then resort to the use of the iodide of potassium, in medium doses, say from five increased gradually to ten grains, three or four times daily.

“Passed Assistant Surgeon, S. Holmes, who witnessed the results of this practice in my hands, made trial of it on the coast of Africa, and as he informed me, with entire satisfaction.”

Case of Ligature of Common Carotid, for removal of Parotid Gland.—By A. B. SHIPMAN, M. D., Professor of Surgery in Indiana Medical College. (Communicated by Dr. Norris.) Mrs. —, ætat. 70, spare habit, but good general health, had a tumour at the angle of jaw, of four years' standing. (She resided in Tully, Onondago Co., New York.) The tumour was about the size of an orange, very hard, with lancinating pains through it. Diagnosis, schirrus of the parotid gland. It was determined to extirpate it. Previous to extirpation it was decided to tie the carotid, which was done by myself, and Dr. Narmon Van Dusen, of Tully. At the commencement of the operation, considerable hemorrhage attended, but, the operation was finished, and the patient recovered, the wound healed, and the ligature came away on the 28th day of the operation. The patient was well one year from the operation, but I understood the tumour returned again in the course of two years, and she finally sunk under it. But she recovered perfectly from the operation of tying the carotid. This was in May, 1844, and has never been reported before.

Case of Excision of the whole of the Genital Organs. By E. W. H. BECK, Ass. Surg., U. S. A. (Communicated in a letter to the Editor, dated, U. S. Hospital, *Matamoras, Mexico*, May 8, 1847.)

SIR,—Permit me to report to you a case that lately came under my care, which, from its oddity and interest, is certainly entitled to a page in your excellent journal. J. B., ætat 31, stout build, bilious temperament, had been a member of the army, but now in the position of bar-keeper in a grocery; on the evening of March 9th, during a fit of delirium tremens, and unmanageable behaviour, was confined in the guard-house. A few minutes after his confinement he borrowed of a fellow-prisoner a short, thick, one-bladed pocket-knife, with which he completely excised the whole of the genital apparatus, close to the body. Flinging them violently into one corner of the room, he very heroically remarked—"Any d—d fool can cut his throat, but it takes a soldier to cut his privates off." This was at seven and a half o'clock. His companion gave the alarm, and the surgeon of the Mississippi regiment, happening to be in the same building, got to him about ten minutes after the accident. Every effort was made to secure the spermatic arteries, but their immediate retraction was so great that he failed in getting them. I was sent for in consultation, but being absent from my room at the time, the courier returned to the doctor stating the fact. The man was bleeding to death, and, in the desperation of the moment, he determined to apply the actual cautery to the bleeding surface.

At eight o'clock, a few minutes after its application, I saw him, and as the bleeding had almost entirely ceased, a large bunch of rags was applied as a compress, and secured by the appropriate bandages; his hips a little elevated; cold applications to the abdomen, and perfect rest and quiet for three hours; at which time he was removed to the General Hospital, and placed in the surgical ward under my care. The amount of blood lost was estimated by all present at near or quite one gallon. One fact worthy of notice here is, that eight or ten minutes after the bleeding commenced, complete consciousness was restored, nor did he exhibit a symptom of *delirium tremens* afterwards. On my visit next morning, he lamented his condition as a sensible man, asked my opinion of his danger; complained of no pain; skin cool; pulse slightly jerking, and tremulous; 88 in frequency. I ordered him barley water, and, fearful of hemorrhage, did not disturb the bandages until a disposition to pass water, which was early the following morning. To remove the dressing the more easily, a soft poultice was applied; and after some difficulty in finding the urethra and passing the catheter, evacuated the bladder, with but a little oozing of blood from the surface and one minute artery, which I secured by torsion. Ever after this, his water passed without artificial assistance; his pulse became equal and soft after a gentle aperient, and absolute diet. Dry dressings—until a yellowish sloughy secretion was coming off, when I washed with a solution of chlorinated soda, and applied simple cerate. The too luxuriant granulations, which soon arose, were suppressed with caustic, and the whole had kindly cicatrized in five weeks from the occurrence of the accident.

The last few days of the healing process, a large silver catheter, and afterwards, an oiled tent, was retained in the urethra, to prevent any contraction, to which there was a great tendency, and around which the orifice closed with a firm callous edge. The superior surface, or that above the urethra, presents a flat, or rather concave appearance, the posterior slightly elevated or ridge-like.

Case of Carcinomatous Tumour, attached to the pelvis of the left kidney. By C. D. GLONINGER, M.D., of Lebanon, Penn.

Casper Shirk, of West Hanover, Dauphin County, Pa., thirty six years of age, scrofulous diathesis. In the autumn of 1843, experienced a slight induration in the left testicle. He felt no inconvenience or pain from it, however, until the 17th of Dec., 1845, on which day he had been riding on horseback, and was exposed to very inclement weather, when he was seized with a severe influenza, and pain in the left lumbar region. He recovered without medical aid, but from this period, the left testicle commenced to enlarge, and increased with great rapidity.

In Sept. 1846, considerable tumefaction occurred in the region of the liver, with flatulence, and febrile symptoms, which were relieved by the ordinary remedies, under the care of Dr. Seiler. The patient also complained of pain in the left kidney, but of none in the left testicle, even under severe pressure. He continued under the use of blue mass, and diuretics, for the space of five or six weeks. The tumour became subject to paroxysms of acute and throbbing pain, and appearances of ulceration were manifested.

Dr. Jno. W. Gloninger of Lebanon, was called in consultation, and excision of the diseased testicle was deemed expedient.

This operation was accordingly performed by Dr. Jno. W. Gloninger, in the presence of Drs. Seiler, Marshall, Behin, Reidenaur's and others. After its excision the patient was relieved of pain in the left kidney, except a slight tenderness on pressure. The wound closed rapidly, and on the twentieth day he arose from his bed. On the day following, he was again attacked with acute pain in the left kidney, retraction of the testicle, copious discharges of urine, depositing a lateritious sediment. These symptoms have not abated, with the exception of the copious secretion of urine, which was now scanty, and the discharge attended with dysuria. He was cupped, and placed under the use of bals. copaiv.; spts. dul. nitr. uva ursi.

January 12.—The patient is very much emaciated, pain in the left kidney lancing, and for its relief opium is resorted to in large quantities, and tonics to brace his system. His sufferings were now almost intolerable, and were terminated by death on the 13th of February.

The post-mortem examination, which was made by Dr. J. Seiler, showed the stomach, liver, spleen, kidneys, intestines, and peritoneum, in a normal condition, but there was attached to the pelvis of the left kidney a carcinomatous tumour, three-and-a-half inches in breadth, and five and a half inches in length, and the lungs were studded with tumours of a similar character, but of smaller dimensions. The weight of the diseased testicle was two pounds, and its anatomical characters indicated sarcoma of the encephaloid variety.

It may be proper to mention, that the patient attributed the origin of the disease to the contusion of the left testicle he received in 1843; however, the post-mortem examination demonstrated, that the disease was constitutional.

DOMESTIC SUMMARY.

Battle of Monterey.—Extract from a letter from Dr. N. S. JARVIS, Surgeon U. S. A., dated Monterey, Mexico, Oct. 1846.—“On the 19th of September we encamped within four miles of Monterey, in a grove of Peccan trees, called ‘Walnut

Grove,' where we were abundantly supplied with clear and cold water, from a stream of considerable size and rapidity, formed by the junction of numerous springs, which took their rise in the surrounding lime-stone rocks. The combination of wood and shade rendered this spot admirably fitted for an encampment. On the following day parties were employed in reconnoitering the enemy, and in observation of the fortified position of the town. Towards evening my regiment, 3d Infantry, with another, were advanced a mile towards the town, to cover a party of engineers, engaged in the erection of a mortar battery, but returned to camp about 9, P. M., having been relieved by another regiment.

On the morning of the 21st the whole division was thrown forward towards the city, with a view, as we supposed at the time, of making a diversion in favour of the 2d division, under Gen. Worth, which was moving on the western side of the city by the Saltillo road. Few of us supposed, as we silently marched along, occasionally passing through cornfields and by the side of hedges, or whatever could conceal our movements from the enemy in their batteries, that we should so shortly be engaged in a fierce and deadly strife. As soon as, or in fact before, we emerged from under cover, the batteries from either end of the city opened their fire upon us, completely sweeping the plain in every direction, and enfilading the advancing columns of our troops, now rapidly marching towards the suburbs. The engineer officer having reported the practicability of attacking with success the rear of some of their forts, the 1st, 3d, and 4th Infantry were ordered to advance rapidly by separate roads, and now it was my professional labours commenced; the nearest and only shelter that presented itself to me for the wounded, falling every moment under a most destructive fire, was a quarry pit, four or five feet in depth, and the same in breadth. Several of these were contiguous, and to them I directed the wounded to be carried. By stooping we were protected from the shots, which, however, became every moment thicker, owing to the fact, that our troops had by this time advanced within range of the enemy's fire, and the moment they perceived a party of men bringing the wounded to us, they directed all their guns upon it. I had already performed one amputation, and was preparing for a second, when two or three fugitives rushed into the pit, falling over the wounded that lay there crowded together, saying that a large body of lancers were approaching. So little credit did I attach to their report, which I ascribed rather to their fears than the actual presence of this dreaded description of troops, that I never raised my eyes to observe them; which circumstance doubtless saved us all. Had I been discovered, all would have been massacred, as in their headlong fury, they would neither have delayed to ascertain our character or profession, nor have paid much respect to our patients. Several soldiers who had sought an adjoining pit with an officer were slain. They were soon after repulsed by a regiment of Ohio and Mississippi volunteers, marching to reinforce those already in the town, and their retreat was farther quickened by a shower of grape opened upon them by our artillery.

I commenced with a determination of giving you a surgical history of the actions of the 21st, 22d, and 23d September, but have unintentionally thus far given a military narrative. This, however, will show, in the incidents above narrated, that the military surgeon is at times somewhat unpleasantly situated, when in the discharge of his professional duties, deprived as he is of the security, and many of the appliances enjoyed by his fellow practitioners in civil life.

The first wounds were received in crossing the plain, and were inflicted by grape and cannon-shot. This was of course before we had approached within reach of their musketry. These wounds were all low: generally at, or just above the ankle, according to distance and direction. Of the first three men brought to me, two had received wounds from twelve pound shots just above the ankle, which had nearly severed the limbs, which were hanging only by a portion of integuments. The other had his heel torn off by a six pound shot. Shortly after, our troops having advanced within reach, and under the fire of the Mexican infantry, numerous cases of wounds by musket and escopette* balls were brought to me; these latter are one-third larger than our musket-balls, and consequently inflict a

* An escopette is a short carbine, similar to a blunderbuss, and carries a ball one-third larger than our musket.--M.

more severe and formidable wound. So numerous at this time became the wounded in our pit, and so constant and heavy the fire, directed towards the parties approaching with the wounded, as to compel us to remove our hospital several hundred yards farther in the rear. We had not long been in our new position, when some covered wagons bringing the wounded attracted the attention of the enemy, who immediately re-opened their fire, compelling us a second time to remove beyond the range of their shot.

Among the numerous projectiles, occasioning severe and fatal wounds, were grape, canister, fragments of iron and copper shells, and stones knocked by the balls from the buildings and walls. Their shells were thrown with great accuracy, frequently in the midst of a body of troops, but fortunately killing and wounding but few.

Before speaking of any particular wounds, I will here take occasion to make some remarks respecting the character they assumed, and the peculiar causes acting to prevent a favourable result, so far as regarded the healing of all, even the most slight. The first annoyance we experienced, and which no doubt exerted an injurious effect, was one little anticipated at the time. The moment a limb was amputated numerous flies would alight on the stump, and must have deposited their eggs, for when it became necessary to dress the stump, myriads of maggots were found buried in it, which could be expelled with great difficulty; rendering it necessary in some instances to re-open the flap, for their complete extermination. A much more formidable enemy made its appearance in an erysipelatous inflammation of the integuments, covering the stump, which generally set in two or three days after the operation; and notwithstanding all the means made use of to arrest it, most commonly ended in sloughing, and either proved fatal or rendered a second amputation necessary. That some influence existed previously, either external or internal, from causes connected with the state of the atmosphere, or habits of the men, arising from diet or water, was manifest. The slightest wound or scratch became in every case a tedious ulcer, in some instances proving a cause for serious alarm. Apparently the most trifling wounds required an unusual time for healing, and even those that had previously healed would break out again, and present greater difficulty in their cure than in the first instance.

At this period no atmospheric causes apparently existed to produce this unfavourable aspect of things. Nothing could exceed the loveliness of the weather, if I may so express myself, and if the middle of the day were warm, the morning and evening refreshed us by a most delightful temperature and cloudless sky. No rain had fallen, with the exception of one or two showers, for nearly a month, and consequently little moisture existed to produce its well known morbid influence. Immediately after the capitulation of the city, on the 25th of September, all the wounded of the different divisions entered the town, and suitable buildings were provided for their accommodation. Upwards of two hundred officers and men from the 1st and 3d divisions, who had been most severely wounded, were conveyed thither on the same day in litters and wagons. The wounded of the second division already occupied the city.

Our camp afforded no comfort nor shelter for them beyond a few small tents and a solitary blanket laid on the ground: and many were destitute of even this apology for a bed, having lost them on our march. Many had no other clothing than that in wear, which was not only torn and soiled in climbing over the hedges, walls, &c., during the battle, but was stiff and saturated with blood from their wounds. A few days after their reception into the hospitals, tertian intermittent fever made its appearance, attacking many of the wounded, and in the majority, retarding or completely arresting convalescence. On many of those severely wounded it exerted a decidedly pernicious influence, and no doubt contributed, in some cases, to a fatal termination. It not only attacked the wounded in the hospitals, but prevailed extensively in camp and among the population of the town and neighboring country. I cannot say to what extent this may be attributed to the putrid exhalations arising from the numerous bodies of men and horses slain in the different combats, and which had been slightly covered with earth, and emitted a most sickening and offensive effluvia. This, doubtless, contributed largely towards infecting or destroying the purity of the air, and establishing a poisonous miasm.—*New York Journ. Med.*, March 1847.

On Fracture of the Skull in Children. By F. H. HAMILTON, M. D. (*Buffalo Med. Journ. and Monthly Rev. of Med. and Surg. Science*, Nov. 1846.)—In relation to the propriety, or necessity of an operation in cases of fracture of the skull, occurring in infancy or early childhood, we have, I believe, been generally silent. We speak always of fractures of the skull as they exist in adults; but the rules of practice applicable in these cases are seldom applicable to children, and the surgeon who does not recognize peculiarities in the cranial anatomy of the latter, must frequently, I think, commit very gross blunders. Thus,

Until the second or third year of life, and occasionally much later, the fontanelles are open.

During the same period, also, very little hard matter has been deposited in the structure of the bones composing the cranium; they are soft and easily bent, and may with little force be depressed, and with as little force replaced. This resilience of the skull gradually diminishes as life advances, but is generally considerable even at the fifth or eighth year.

In early life the cranial bones are very thin, and not until about the fifth year can a distinct diploic structure be detected. The dura mater is also very firmly adherent to the skull.

From the two circumstances first mentioned, viz., the open state of the fontanelles, and the pliancy of the bones, it happens that if by accident the skull is forced in upon the brain during early life, unless the depression is very considerable, no coma is produced; the brain pressing out at the fontanelles, or displacing the bones upon the opposite side, to a sufficient extent to prevent compression. From the softness of the bones it also happens that the skull is rather *bent* in than broken, and no sharp spiculæ exist which can penetrate and disturb the brain.

While their elasticity is such, that generally after a time, longer or shorter, according to the age of the patient, and depth of the depression, they resume spontaneously their original position.

Treatment.—Finally, from all these facts we infer,

1. That if a fracture with depression occurs in a child, and no signs of compression follow, no operation is justifiable. The depression is harmless and the probability is that in a few weeks or months the deformity will disappear.

2. That if symptoms of compression do actually exist, and there is no external wound which will at once admit the elevator to the fracture, unless the coma has continued several hours, no operation, not even the incision of the scalp is generally proper. And if, after the lapse of "several hours" the coma continues, yet is not great, or if it is gradually diminishing, it is still well to delay an operation.

3. If in connection with the coma there exists also a considerable external wound, so that instruments can at once be applied to the skull, and the elevator has been used with skill and without effect, still the propriety of resorting to the saw or trephine may be doubtful. Because, at this period of life it is difficult to make a successful operation. The trephine must traverse the entire thickness of the skull, (not *nearly* through, or only through *at points*, leaving the balance of the inner plate to be *broken up* with the levator as we practice in adults, since the bones are too soft to be broken up by the levator;) and then the teeth of the saw are almost certain to lacerate the dura mater, and the more so because this membrane is, at this age more closely attached, and the mere concussive effects of the blow does never (as often happens in *adults*) separate it from the bone. Owing to this closer union also of the dura mater to the skull, the separation of a fragment of the latter is accomplished with greater violence and produces more inflammation. Having made a sufficient opening with the trephine, to admit the elevator, the depressed fragments are not always easily elevated, owing to the bending of the edge under which the elevator rests, so that often it becomes necessary to introduce the levator again at another point: and still farther to increase the difficulty, the depression is generally much more extensive in children than in adults.

When we regard this accumulation of difficulties, and place against it the fact that the bones do even in some of the most desperate looking cases come back spontaneously, we shall conclude that *an operation can seldom be necessary or proper*. The following cases may serve to illustrate these positions.

Case 1. Depression but no coma, bones resumed their places spontaneously.—Nov. 20. 1844. Infant son of James McGraith, Rochester, aged 18 months, fell from a pair

of stairs six feet, the head striking upon a stone. Right parietal bone was depressed half an inch, and for about two inches in length; scalp torn up at point of fracture. One hour after the accident I saw the child; he was nursing; no signs of cerebral disturbance; seemed playful and free from pain. I applied cool lotions and directed a mild cathartic. Three weeks after, while absent, I learned from another physician that the bones had nearly resumed their places, and that the child had never seemed to suffer from the accident.

Case 2. Depression without coma, and bones gradually resuming their position.—Sept. 26, 1846. Dr. Wilson, the intelligent native physician of Cattaraugus, brought to me his son, aged five months. Two weeks before, he was thrown with violence from a buggy upon the ground while descending a hill, and the right parietal bone was forced in three-quarters of an inch, and over a space covering two and a half inches in length by one and a half in breadth. The child has never been comatose. During the two first days he was easily startled, but was otherwise well. When I saw him on the 26th the indentation had diminished in depth a little; he had not suffered in any way from the accident except as stated on the two first days. He was entirely well. Dr. Wilson had been advised by physicians to make an operation.

Case 3. Fracture and depression, with extensive suppuration under skin of scalp, but no coma.—Aug. 10, 1835. Jane Corey, aged 3 years, Cayuga Co., was climbing through a rail fence, when a rail fell and struck her near the top of the head. I saw her two weeks after the accident, and found a large abscess under scalp which I opened. The skull was broken and depressed considerably, but she had never had coma, or any sign of cerebral disturbance. I did not elevate the bones. A few months later she was well.

Case 4. Fracture and extensive depression, with slight external wound; no coma, bones restored spontaneously.—Jan. 2, 1840. While at Fairfield, Herkimer Co., I was called in the night to the town at Newport; the physician who sent for me stating in his note that the "whole side of the child's head" was "driven in" and that my instruments would be indispensable. The parents had been riding in a sleigh, the horse became frightened and unmanageable, and dashing finally against an awning post, both parents and child were thrown with great violence upon the side walk, the head of the child striking a corner of the curb stone.

I found an infant aged about 14 months, one side of the skull fractured and driven in to the depth at the deepest point of nearly an inch, and the depression covering about four inches by two and a half, with a slight wound over the fracture. When first taken up, the child was pale and apparently insensible, but it soon recovered, and now, four hours after the accident, he was bright and intelligent—he had slept and nursed. A cathartic and cooling lotions were recommended. About three weeks after, at my special request, the parents brought the child before the class, and I was happy to show them that the little fellow was not only quite well, but that the skull had again resumed its place, and we need have no further solicitude about "cautiousness" and half a dozen other important organs, whose house-room had been so seriously curtailed.

Case 5. Depression and fracture, extensive; deep and continued coma; effusion of serum, eventual recovery and spontaneous replacement of bones.—1837. Son of P. Parker, of Scipio, aged 3 years, was playing in the barn, when a scantling fell from the scaffold and one end struck him obliquely on the left parietal bone, crushing in the bones and apparently extinguishing life for a time. When I saw him about four hours after the accident he was in a deep coma, pupils dilated and immovable, eyes crossed, pulse slow and very feeble, breathing laboured. The whole length of the parietal bone was broken in two parallel lines, intersecting in the centre by a cross fracture, at which central point the depression was very great. After some delay, Dr. Gilmore, the attending physician, and myself, determined to advise the parents that an operation would be necessary, and that we would proceed immediately. We proposed first to make an incision and try the elevator, and in case of failure we had determined to trephine. The parents refused peremptorily to have any operation made. They believed the child would die, and to injure him farther seemed to them barbarous. We were forced to submit. We remained during the night and before morning we bled him and administered by injection, oil and turpentine.

Next morning.—"Injection has operated; coma less profound; can arouse him slightly;" continued injections, cold lotions to head, friction to extremities, &c. &c.

Third day.—"Has improved considerably; wakes easily; slight squinting; pupil less dilated; can swallow with some effort; bones less depressed; right arm and leg completely paralyzed."

Twelfth day.—"Still improving; paralysis gone; squints some. Before the injury he had learned to talk very intelligibly. He now begins to say 'Pa,' and 'Ma,' but seems to have forgotten all other language."

About the *third week*, a small fluctuating tumour made its appearance over the anterior portion of the fracture, which on careful examination we diagnosed as an effusion of serum under the scalp and communicating with the meninges of the brain. It disappeared gradually after several weeks, and the bones having resumed entirely their original position, the cure was finally complete.

I still believe that in this case an operation would have been *proper*, yet the result proves that it was not *necessary*.

Statistics of Private Obstetric Practice. By JAMES C. BLISS, M.D. (*New York Journ. Med.*, Jan. 1847.)—Dr. Bliss's statistics embrace 820 cases of delivery. Of this number, 815 were born in the following months:

In the Month of January,	-	52
" " February,	-	63
" " March,	-	74
" " April,	-	57
" " May,	-	62
" " June,	-	71
" " July,	-	65
" " August,	-	81
" " September,	-	75
" " October,	-	80
" " November,	-	72
" " December,	-	63

It will appear from this table, that the greatest number of births occurred in the month of August, and the fewest in January. In the former month they amounted to 81, while in the latter there were but 52. In the month of October there were 80, in September 75, and March 74. These facts show that the greatest number of conceptions occurred in the months of December, February, January, July, March, and October: and in the order in which they are named.

The sex of *Seven hundred and ninety-seven* children has been noted. Of this number 395 were males, and 402 were females. This shows a summing up considerably at variance with most reports, the number of male children generally preponderating from three to ten per cent. over the other sex. According to the registry of Dr. Collins, a little more than 8-15ths of the total births were males.

The presentation in *Seven hundred and seventy-one* deliveries is recorded. Of this number there were:

Natural presentations,	-	738
Breech " "	-	15
Funis & breech " "	-	1
The foot " "	-	8
The face " "	-	1
The face towards the pubis		7
The arm and abdomen	-	1

It will appear from this, that in about one case in 22 the presentation was preternatural. The proportion in the Dublin Lying-in Hospital, according to Dr. Collins, was one to every thirty, but it will be remarked that in his Treatise he does not include presentations of the face, and the face towards the pubis, among preternatural presentations. Should these be included, the proportions will not probably very materially differ.

Of the 820 cases, *forty* are noted as being premature births. That is, about one in twenty were born before the full period of pregnancy was completed.

Out of the same number, viz., 820, *twenty-one* were born dead. This shows a small fraction over one still-birth to every thirty-nine deliveries. In the Dublin Lying-in Hospital, a little short of every 15th child was born dead. This discrepancy between hospital and private practice is doubtless owing to the difference in condition and character of the patients.

<i>The Funis was around the neck</i> once in				127 cases.
"	"	"	twice in	21 "
"	"	"	three times in	6 "
"	"	"	four in	1 "

A little over every fifth child, according to this record, had the cord around the neck at birth.

In *seventy-nine* cases of the 820, *the membranes broke* before or at the accession of labour. The duration of labour, in *seventy-five* of these cases, was as follows, viz:

One hour	-	-	1	Twelve hours	-	-	9
Two	-	-	2	Thirteen	-	-	1
Three	-	-	4	Fourteen	-	-	3
Three and a half	-	-	1	Fifteen	-	-	1
Four	-	-	6	Sixteen	-	-	2
Four and a half	-	-	1	Eighteen	-	-	2
Five	-	-	8	Twenty	-	-	3
Six	-	-	4	Twenty-four	-	-	2
Six and a half	-	-	1	Thirty	-	-	1
Seven	-	-	3	Thirty-two	-	-	1
Eight	-	-	3	Thirty-four	-	-	1
Nine	-	-	2	Thirty-six	-	-	3
Ten	-	-	1	Forty-three	-	-	1

The average duration of labour, under these circumstances, was $10\frac{3}{4}$ hours. This shows that this occurrence did not very materially retard the progress of parturition.

The pregnancies of 690 cases are recorded.

Of the	First pregnancy	there were	184 cases.
"	Second	"	138 "
"	Third	"	116 "
"	Fourth	"	78 "
"	Fifth	"	60 "
"	Sixth	"	26 "
"	Seventh	"	32 "
"	Eighth	"	10 "
"	Ninth	"	14 "
"	Tenth	"	12 "
"	Eleventh	"	10 "
"	Twelfth	"	5 "
"	Thirteenth	"	5 "

This shows that a fraction over every third birth was the first child.

	every fifth	"	second
a little short of	every sixth	"	third
a little less than	every ninth	"	fourth
	every eleventh and $\frac{5}{10}$	"	fifth
	" twenty-sixth and $\frac{1}{2}$	"	sixth
	" twenty-first and $\frac{1}{2}$	"	seventh
	" sixty-ninth	"	eighth
	" forty-ninth	"	ninth
	" fifty-eighth	"	tenth
	" sixty-ninth	"	eleventh
one hundred and thirty-eight		"	twelfth
one hundred and thirty-eighth		"	thirteenth

Of the whole number, two only of the fetuses were *monsters*.

There were, out of the whole number, *eight twin births*. This shows a proportion much less than occurs in the Lying-in Hospitals in Europe. The number, as above stated, is *one* to every *one hundred and two* cases, while in the European reports it as follows, viz:

In France	one to every	ninety-five	births
In Germany	"	eighty	"
In England	"	ninety-two	"
In Scotland	"	ninety-five	"
In Ireland	"	sixty-three	"

See Collin's Treatise, Am. Ed. p. 153.

The duration of labour is noted in 809 cases, and is as follows, viz:

Ten minutes	-	-	1 case	11 hours	-	-	4 cases
$\frac{3}{4}$ of an hour	-	-	1 "	12 "	-	-	13 "
1 "	-	-	3 cases	13 "	-	-	3 "
$1\frac{1}{2}$ "	-	-	4 "	14 "	-	-	14 "
2 hours	-	-	4 "	15 "	-	-	1 "
$2\frac{1}{2}$ "	-	-	4 "	16 "	-	-	2 "
3 "	-	-	6 "	17 "	-	-	4 "
$3\frac{1}{2}$ "	-	-	5 "	18 "	-	-	6 "
4 "	-	-	13 "	19 "	-	-	2 "
5 "	-	-	8 "	21 "	-	-	1 "
6 "	-	-	18 "	24 "	-	-	5 "
$6\frac{1}{2}$ "	-	-	1 "	26 "	-	-	1 "
7 "	-	-	4 "	29 "	-	-	1 "
$7\frac{1}{2}$ "	-	-	1 "	30 "	-	-	3 "
8 "	-	-	7 "	32 "	-	-	1 "
$8\frac{1}{2}$ "	-	-	1 "	36 "	-	-	1 "
9 "	-	-	10 "	37 "	-	-	1 "
10 "	-	-	3 "	43 "	-	-	1 "
$10\frac{1}{2}$ "	-	-	1 "	46 "	-	-	1 "

The average duration of labour, in these 890 cases, was a fraction over ten hours.

Out of the whole number *three* were cases of *instrumental delivery*. The proportion is *one* to every *two hundred and seventy-third* case. This shows a proportion much less than occurs in the European Hospitals, or in the private practice of those from whom we have reports.

In the three cases in which instrumental delivery was resorted to, the forceps were used twice, and the perforator and crotchet once.

The first case in which forceps were employed, labour was rendered tedious by narrow pelvis, and the face of the child being towards the pubis. Delivery was accomplished at the end of 33 hours, the child being dead. The mother recovered slowly. An abscess formed around the hip some weeks after her confinement, which was attended with fever and great debility. Her health was ultimately restored, and she subsequently bore a living child without any untoward circumstances.

The second case was that of a lady 42 years of age, with her first child. She had been attended by a practitioner 81 hours previous to my being called. The head was so far advanced that delivery was readily accomplished. The child was living, notwithstanding the long continued pressure it had suffered. The mother also had a good getting up, and without any unfavourable symptom intervening.

The third case was that of a patient labouring under violent puerperal convulsions, with whom all the usual remedies had been employed without success. Delivery was attempted with forceps, which failed in consequence of violent convulsions being brought on whenever any effort was made with the instrument. The child was delivered by diminishing the head and using the crotchet. The cellular tissue of the patient was enormously distended by dropsical effusion. The patient was not seen by the writer after the birth of the child, she being in charge of another physician, but he understood she died some days afterwards of effusion in the chest.

In the case of presentation of arm and abdomen, the child, which was large, was turned and delivered by the feet. It was born dead. The mother recovered without any unfavourable circumstance following.

Four cases were preceded by *puerperal convulsions*. This is in the proportion of one to every 205 births—while, under the mastership of Dr. Collins, only one in every 555 occurred in the Dublin Lying-in Hospital.

One of the cases is detailed under the head of instrumental deliveries. In every case, it occurred with the first child. In each instance, also, there was infiltration in the cellular membrane. In one case only was the urine examined, and in this it was found to be albuminous. The patients, with the exception of the first noticed, were relieved of the convulsions before delivery, by bleeding, stimulating injections, purgatives, and counter-irritants. The children were all born dead; two were in a state of decomposition, and there was reason to believe all died previous to the attack. The patients all did well, with the exception of the one described under the head of instrumental deliveries. *Œdema* existed in these cases previous to the occurrence of convulsions, and it was considerable, except in one instance, which does not correspond with the observations of Dr. Dewees.

In the detail of cases in my note book, several are noticed in which convulsions were threatened, in all of which these were bloated countenances, and more or less *œdema* in other parts of the body. In one of these cases the urine was albuminous. These facts would seem to show that Dr. Lyman, whom Dr. Dewees quotes, is correct in stating that *œdema* is a precursor of convulsions.

The detection of albumen in the urine of females, threatened with or labouring under this disease, has thrown much light on the pathology of the affection; and further inquiries will probably remove much obscurity, which, no doubt, has led practitioners, in many instances, to confound hysteria with this formidable complaint.

In one of the cases, in which the attack occurred in the seventh month, labour came on, and the *fœtus* was delivered three days after the convulsions had ceased. The child was in a state of partial decomposition.

The observation, that convulsions more commonly occur in the first labour, than in subsequent ones, appears to be confirmed by these cases; and likewise, that they happen more frequently when the child is dead, although the latter observation is questioned by some of our best writers. In all the cases the presentation was natural.

The *placenta* was attached over the mouth of the uterus in *three instances*. This is in the proportion of one to every 273 cases.

In one instance, the edge of the *placenta* was over the mouth of the uterus. The patient had repeated hemorrhage for two months previous to delivery, but it was at no time alarming. Labour commenced with profuse flooding, followed by syncope. The vagina was plugged, which arrested the hemorrhage till the head advanced so as to make pressure. The mother was safely delivered, but the child was dead and exceedingly blanched.

In the second case, I was called to a patient who was attended by a popular female. She had been flooding for ten hours,—was in a state of extreme exhaustion, and swooned immediately after I entered her room. The hand was passed up through the edge of the *placenta*—the feet brought down, and the child delivered in three minutes from the commencement of the operation. The child was born alive, but the mother, although she lost less than a pint of blood at the time, died at the end of an hour and a half after the birth of the child.

In the third case, the patient was taken with flooding on Sunday, but not profuse. On Wednesday, a profuse hemorrhage suddenly occurred. A physician was called in, who found, as he stated, the *os uteri* dilated to the size of a shilling. When seen an hour afterwards by the writer, the flooding had been so great, and the exhaustion so extreme, that the patient was almost moribund. On examination, a small portion of the *placenta* was found protruding from the mouth of the womb. The feet of the child were brought down and secured by a tape, and attempts made to deliver in this way, but decomposition had made such progress that the feet were immediately separated from the legs; and, notwithstanding the relaxation which had taken place in the mother from the great exhaustion, it was found difficult to effect delivery on account of the condition of the *fœtus*—the abdomen

being very much distended by effused fluid in its cavity. The finger was passed through its parietes, through which opening the fluid rushed out. The finger was then hooked over the pelvis, and in this way the body was brought down and delivered. The patient survived but about twenty minutes. The loss of blood was inconsiderable at the time of delivery.

Bifid Vagina.—Prof. S. H. DICKSON records, in the *Southern Journ. of Med. and Pharm.*, (May, 1847,) the following example of this malformation.

"Mrs. — came to the city, 1839, to consult me. She has been two years married—has always suffered from irregular and scanty menstruation; it is but a few months since she has become aware of the existence of some genital malformation. The vagina is divided—neither longitudinally, nor transversely, but obliquely—by a membranous partition. Both tubes are long and narrow. Coition is difficult, particularly if the right (and somewhat anterior) opening be entered. The left, which is obliquely posterior, leads to the uterus, the os tincæ presenting; the right conducts to the side of the uterus in which the membranous partition loses itself; the cul-de-sac is not to be reached by the fingers; a long probe or bougie may pass up six inches or more, but gives pain, and, when withdrawn, is coated with bloody mucus. The dividing membrane lies in loose folds; is smooth and well lubricated; it projects slightly between the labia. It possesses very little sensibility."

Two examples of the same malformation are noticed in our No. for Jan. last.

Inversion of the Uterus successfully treated. By E. H. M'COY, M. D., of Harrisville, Ohio. (*Western Journ. of Med. and Surg.*, Jan. 1847.—The subject of this case was 21 years of age, and had been delivered by a midwife. When seen two days afterwards, by Dr. M'COY, her respiration was diaphragmatic; skin hot and dry; pulse small, wiry, incompressible, and beating one hundred and fifteen in the minute; mouth dry; tongue covered with a dark brown fur. She had extreme abdominal tenderness; the lochia was suppressed, and she experienced continued bearing-down pains. On examination per vaginam, he found the uterus inverted, and the vagina reflected in the form of a ring around the pedicle of the tumour. He introduced his hand in a conical form, indented the apex of the tumour, and gradually but perseveringly carried it up through the *os uteri*, entirely relieving the expulsive after-pains. He ordered an infusion of chamomile flowers to be thrown into the vagina every two hours, together with fomentations of hops to the abdomen, and a powder containing grs. 5 pulv. antimonialis, gr. 2 calomel, and gr. $\frac{1}{2}$ opium; one to be taken every two hours. On his second visit, eighteen hours after reducing the inverted womb, he found a decided improvement in all the symptoms; the powders had acted freely on the bowels, bringing away copious, dark, bilious dejections; the abdominal tenderness was subsiding; the lochia had returned; the pulse had fallen to ninety, and was soft and full; the skin was relaxed and moist, and the secretion of milk was established. The patient speedily recovered.

On the powers of Strychnine in the cure of Chronic Bronchitis. By Dr. P. H. CLARKE, of Port Washington, W. T. (*Illinois and Indiana Medical and Surgical Journal*, April and May, 1847.)

The author relates in this paper several cases of what he considers to be chronic bronchitis, cured by the administration of strychnia. "Having been afflicted," he says, "quite a number of years with bronchitis, and finding no medicines which gave me relief, I was induced to try the effect of strychnine, which resulted in a perfect cure. My symptoms, when I commenced using it, were emaciation, night-sweats, and continued mucous expectoration, attended with cough, at times very severe, after which the muscles of the larynx were so completely relaxed, that I could not utter a sound above a whisper, but unattended with pain. I commenced the use of the strychnine, as advised, by taking one-twentieth of a grain suspended in mucilage, three times in a day, and increased the dose every third day until I took one-fifth of a grain. I used the remedy about four weeks, and have never experienced any difficulty since. I was much astonished at its results, and more especially at the effects it produced upon the contractility of the muscles of the larynx, as well as upon the muscles of the extremities."

That the strychnia should be beneficial in restoring the voice, in cases in which its loss results from deficiency of power in the muscles of the larynx, is in strict accordance with its known action, and need not excite surprise. As a tonic, it may also *indirectly* aid in the relief of chronic bronchitis, but that it possesses any direct action in the cure of that disease is, to say the least, problematical.

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Standing committees to report at the meeting in Baltimore on the first Tuesday in May, 1848.

Committee of Arrangements.—Dr. G. C. M. Roberts, Balt., *Chairman*; Drs. A. C. Robinson, Balt.; Wm. Power, do.; J. H. Briscoe, do.; W. T. Leonard, do.; J. R. W. Dunbar, do.; C. Bell Gibson, do.

Committee on Medical Sciences.—Dr. S. Henry Dickson, S. C., *Chairman*; Drs. J. P. Jervey, S. C.; Wm. T. Wragg, S. C.; Robert Bridges, Phila.; Wm. Power, Balt.; J. W. Francis, N. Y.; T. Romeyn Beck, N. York.

Committee on Practical Medicine.—Dr. Joseph M. Smith, N. Y., *Chairman*; Drs. René La Roche, Phila.; J. B. Beck, N. Y.; John Harrison, La.; Isaac Wood, N. Y.; H. M. Bullitt, St. Louis, Mo.; G. S. Camman, N. Y.

Committee on Surgery.—Dr. George W. Norris, Phila., *Chairman*; Drs. Isaac Parrish, Phila.; J. Randolph, do.; John Watson, N. Y.; H. H. McGuire, Petersburg, Va.; A. L. Pierson, Salem, Mass.; C. Bell Gibson, Balt.

Committee on Obstetrics.—Dr. Harvey Lindsly, D. C., *Chairman*; Drs. G. C. M. Roberts, Balt.; W. Channing, Boston; J. Riley, D. C.; C. R. Gilman, N. Y.; R. W. Haxall, Richmond, Va.; S. Annan, Lexington, Ky.

Committee on Medical Literature.—Dr. Oliver Wendell Holmes, Boston, *Chairman*; Drs. E. Hale, Boston; G. C. Shattuck, Jr., do.; D. Drake, Louisville, Ky.; John Bell, Phila.; Austin Flint, Buffalo; W. Selden, Norfolk, Va.

Committee on Medical Education.—Dr. Alexander H. Stevens, N. Y., *Chairman*; Drs. Amos Twitchell, Keene, N. H.; R. D. Arnold, Savannah; B. R. Wellford, Fredericksburg, Va.; F. Campbell Stewart, N. Y.; Arnold Naudain, Phila.; L. P. Bush, Wilmington, Del.

Committee on Publication.—Dr. Isaac Hays, Phila., *Chairman*; Drs. Alfred Stillé, Phila.; J. R. W. Dunbar, Balt.; J. V. C. Smith, Boston; Gouverneur Emerson, Phila.; J. P. Garvin, Augusta, Ga.; Caspar Morris, Phila.

Committee on Indigenous Botany, under the Resolution of Dr. N. S. Davis.—Dr. N. S. Davis, Binghampton, N. Y., *Chairman*; Drs. S. W. Williams, Mass.; Eli Ives, Conn.; Engleman, Mo.; W. A. Cheatham, Tenn.; Jos. Carson, Pa.; Charles Short, Ky.; E. E. Phelps, Vt.; A. Twitchell, N. H.; T. C. Dunn, R. I.; Lyndon H. Smith, N. J.; Jas. Couper, Del.; A. C. Robinson, Md.; Frederick Marx, Va.; J. P. Porcher, S. C.; J. Le Conte, Ga.; Cartwright, Miss.; Carpenter, La.; John M. Bigelow, Lancaster, Ohio; G. Norwood, Ind.; Merryman, Springfield, Ill.; Russel, Detroit, Mich.; J. Riley, D. C.

New Works.—Amongst the works on our table, which we have not been able to notice in this number, we may mention, as particularly worthy of attention, Dr. TOWNSEND'S Translation of the Valuable Operative Surgery of Prof. VELPEAU, with Notes and Observations by Prof. MORT, in three large Volumes, of 3000 pages, and a quarto Volume of 22 plates; published by Messrs. Wood of New York.

Also the admirable system of Surgery by Prof. CHELIUS, Translated with additional notes and observations by Mr. SOUTH, and edited with further additions by Dr. NORRIS; just issued complete by Messrs. Lea and Blanchard. This work has gone through six editions in Germany, and has been translated into seven foreign languages. Its methodical arrangement, conciseness, accuracy and practical character, render it an admirable text-book for students and a valuable practical guide for the surgeon. It holds the very highest rank as a systematic work on surgery.

University of Pennsylvania.—At a Public Commencement held April 3, 1847, in the Musical Fund Hall, Locust Street, the Degree of Doctor of Medicine was conferred by the REV. JOHN LUDLOW, D. D., Provost, upon the following gentlemen; after which an Address was delivered by DR. N. CHAPMAN, Professor, &c.

NAME.	STATE.	SUBJECT OF ESSAY.
Abbott, Robert O.	West Indies,	Pathological changes of the Blood.
Alexander, Chas. Edward	Virginia,	Abortion.
Alexander, Cyrus	Virginia,	Hæmoptysis.
Allen, John Farrell	Missouri,	The Blood.
Archer, George W.	Maryland,	Dysentery.
Averett, Edmund B.	Virginia,	The Fever in Halifax in 1846.
Bellard, William H.	Louisiana,	Phthisis Pulmonalis.
Bent, Charles	Nova Scotia,	Pneumonia.
Blisoly, Virginus B.	Virginia,	Blenorrhagia Virulenta.
Blackman, William C.	Tennessee,	The Liver.
Brickell, D. Warren	Mississippi,	Tokological Reflections.
Brodnax, Robert W.	Virginia,	Intermittent Fever.
Browne, William T.	Virginia,	Intermittent Fever.
Buckner, Baldwin M.	Virginia,	Diseases of Stomach.
Bullock, William R.	Delaware,	Typhoid Fever.
Burroughs, John B.	Virginia,	Bilious Remittent Fever.
Camp, William F.	N. Carolina,	Influence of Atmospheric Air on Human Life.
Campbell, Chas. F. H.	Virginia,	Scorbutus.
Casseday, Davis B.	Pennsylvania,	Mind and its disorders.
Cobbs, James H.	Tennessee,	Connection of Mind and Matter.
Coleman, Charles W.	Virginia,	Miasmata.
Cook, Edwin R.	Virginia,	Dysentery.
Cook, Joseph	New Jersey,	Pertussis.
Cooper, George E.	Pennsylvania,	Urinary Calculi.
Crawford, John T.	Pennsylvania,	Neuralgia Faciei.
Cunningham, Jesse S.	Missouri,	Intermittent Fever.
Davis, John W.	N. Carolina,	Intermittent Fever.
Dawson, Henry W.	Alabama,	Remittent Fever.
Dell, James G.	Florida,	Erysipelas.
De Saussure, Henry B.	S. Carolina,	Dropsy,
Dewey, Charles F.	N. Carolina,	Strabismus.
Dickenshied, John H.	Pennsylvania,	Signs of Pregnancy.
Dorrance, Henry B.	Pennsylvania,	Miasmata.
Douglas, J. Hancock	New York,	Cynanche Trachealis.
Dulany, Joseph E.	Virginia,	Angina Pectoris.
Dunn, William A.	Georgia,	Acute Pleuritis.
Du Pré, Daniel, Jr.	N. Carolina,	Bathing.
Dupuy, John J.	Virginia,	Traumatic Irritation.
Du Vall, Edmund P.	Maryland,	Menstruation.
Elwell, Alexander	New Jersey,	Mental Precocity.
Eppes, Richard	Virginia,	Cathartics.
Evans, Robert F.	Tennessee,	Use and Abuse of Mercury.
Ewing, Hugh M.	Tennessee,	Typhoid Fever.
Finney, John M.	Maryland,	The Blood.
Firey, William	Maryland,	Hæmoptysis.
Fisher, John T.	Alabama,	Congestive Fever.
Foster, John D.	Tennessee,	Acute Peritonitis,
Foster, Robert C.	Tennessee,	Yellow Fever.
French, David M.	Virginia,	Hæmorrhage.
Frierson, Adolphus H.	S. Carolina,	Hepatitis.
Gauntt, Franklin	New Jersey,	Phthisis Pulmonalis.
Gill, Joseph W.	Kentucky,	Typhoid Fever.
Gilliam, James S.	Virginia,	Ramollissement.
Glen, Edward J.	Pennsylvania,	Opium.
Hargrove, John T.	Virginia,	Inflammation.
Harper, C. Cox	Maryland,	Menstruation.
Harris, Whitson A.	Tennessee,	Etiology of Fevers.
Heermann, Theodore	Louisiana,	Catoptric Examination of the Eye.
Henley, Leonard	Virginia,	Remittent Fever.

NAME.	STATE.	SUBJECT OF ESSAY.
Herndon, Bartlett, Y.	Mississippi,	Puerperal Convulsions.
Herron, William M.	Pennsylvania,	Influence of the Emotions, &c.
Holcombe, William H.	Indiana,	Function of Locomotion.
Hooker, Octavius	N. Carolina,	Dyspepsia.
Howlett, John	Virginia,	Inflammation.
Humrickhouse, John	Ohio,	Gangræna Oris.
Inge, Haley Jay	Mississippi,	Angina Membranacea.
Irwin, John S.	Pennsylvania,	Synovitis.
Jackson, John F.	Virginia,	Dysentery.
Janvier, Edgar,	New Jersey,	Sympathy.
Jarmon, Thomas S.	Tennessee,	Epidemic Erysipelas.
Jefferis, John P.	Pennsylvania,	Intermittent Fever.
Jennings, John M.	Georgia,	Cholera Infantum.
John, Henry	Pennsylvania,	Jaundice.
Jones, Richard T.	Virginia,	Hepatitis.
Keller, Joseph A.	New York,	Erysipelas.
Kendall, John N.	Alabama,	Vis Medicatrix Naturæ.
Kern, William M.	Pennsylvania,	Syphilis.
Kirk, James, Jr.	S. Carolina,	Febris Intermittens.
Knight, Lewis W.	Tennessee,	Dyspepsia.
Kumpé, George E.	Alabama,	Diet.
Laird, John W.	Pennsylvania,	The Three Cardinal Remedies.
Levick, James J.	Pennsylvania,	Medicine and Medicinal Plants.
Lytle, Randal M.	Tennessee,	The Anatomy of The Liver.
Manlove, William S.	Virginia,	Febris Intermittens.
Marbury, William	D. of Columbia,	Pneumonia.
Marshel, A. Addison	Pennsylvania,	Fractures.
Martin, Thomas W.	Maryland,	Ophthalmitis.
Mayo, Littleton Upshur	Virginia,	Apoplexy.
M'Alpine, James N.	Virginia,	Gastro-Hysterotomy.
M'Grew, Joseph H. M.	Tennessee,	Diseases of the Heart.
M'Keage, John M.	Tennessee,	Acute Peritonitis.
M'Kim, William	Pennsylvania,	Asphyxia.
M'Kinnee, David	N. Carolina,	Acute Gastritis.
Mercer, John R.	N. Carolina,	Counter Irritation.
Michal, George W.	N. Carolina,	Asphyxia.
Mims, Alexander T.	Alabama,	Gun-shot Wounds.
Moore, Richard H.	Virginia,	Diabetes Mellitus.
Morgan, Nathaniel A.	Alabama,	Pleuritis.
Myrick, Thomas N.	N. Carolina,	Malaria and Miasma.
Ogden, Charles A.	Pennsylvania,	Cholera Infantum.
Paine, Sterling L.	Mississippi,	Acute Gastritis.
Parke, Charles R.	Pennsylvania,	Scarlatina.
Perry, Mark P.	N. Carolina,	Intermittent Fever.
Perry, Samuel	N. Carolina,	Remittent Fever.
Perry, Thomas H.		
(U. S. Navy.)	Massachusetts,	Insanity.
Petherbridge, John B.	New Jersey,	Puerperal Convulsions.
Potter, George L.	Pennsylvania,	Acute Peritonitis.
Potter, J. Barron	New Jersey,	Reciprocal Action of Body and Mind.
Pressly, Joseph H.	Alabama,	Circulation of the Blood.
Purnell, Aurelius M.	Alabama,	Yellow Fever.
Randolph, Richard Jr.	Pennsylvania,	Sanguiferous System.
Ringgold, Fayette M.	D. of Columbia,	Croup.
Rives, Robert G.	Alabama,	Acute Gastritis.
Ross, Robert D.	Cher. Nation,	Apoplexy.
Sankey, John T.	Alabama,	Asclepias Syriaca.
Sargent, Winthrop, Jr.	Massachusetts,	Typhoid Fever.
Schenck, John V.	New Jersey,	Sympathy.
Seiple, Samuel P. (M. D., Jeff.		
College, 1845.)	Virginia,	Erysipelas.
Sharp, Amos	Nova Scotia,	Phthisis Pulmonalis.
Siddall, Hugh W.	Indiana,	Physiology of Spleen.
Simonton, John W.	Pennsylvania,	Acute Hydrocephalus.
Slocum, Alfred M.	Pennsylvania,	Anatomy of the Eye.
Smith, Carlos G.	Alabama,	Medicine and Auxiliary Sciences.
Smith, Charles M.	Virginia,	Anatomy & Functions of the Kidneys.

NAME.	STATE.	SUBJECT OF ESSAY.
Smith, Daniel E.	N. Carolina,	Mercury.
Smith, Fisher C.	Pennsylvania,	Formation of Callus.
Smith, Howard	Louisiana,	Tetanus.
Smith, Ira E.	Georgia,	
Smyser, Henry L.	Pennsylvania,	Colica Pictonum.
Spayth, James	Ohio,	Chlorosis.
Stewart, Lemuel L.	Pennsylvania,	Digestion, &c.
Strawbridge, James D.	Pennsylvania,	Thoracic Aneurism.
Suddards, James	Pennsylvania,	Pneumonia.
Taylor, Alexander	N. Carolina,	Colica Pictonum.
Taylor, William	New Jersey,	Pneumonia.
Thomas, Robert P.	Pennsylvania,	Morbus Coxarius.
Thompson, John R.	N. Carolina,	Croup.
Townsend, Howard	New York,	General Principles of Physiology.
Tucker, John M.	Virginia,	Inflammation.
Tucker, P. W.	Mississippi,	Pleuritis.
Tucker, Robert J.	Virginia,	Intermittent Fever.
Turnbull, Ferdinand S.	Virginia,	Icterus.
Turner, Simon	Tennessee,	Acute Rheumatism.
Van Valzah, Robert H.	Pennsylvania,	Pneumonia.
Wallis, James M.	Pennsylvania,	Acute Gastritis.
Waters, William Weston	Missouri,	Tetanus.
Watson, John T.	N. Carolina,	Physiology of Vision.
Whitten, Alfred W.	S. Carolina,	Hernia.
Williamson, John L.	N. Carolina,	Quinine in Fevers.
Wilson, Robert S.	Georgia,	Malaria and Malarious Fever.
Wister, Owen Jones	Pennsylvania,	Traumatic Hæmorrhage.
Wood, George K.	New York,	Asphyxia.
Woodhouse, Samuel W.	Pennsylvania,	Fracture of the Femur.
Woodruff, Julian S.	Florida,	The Catamenia, &c.
Wright, James P.	Virginia,	Carcinoma.
Zollickoffer, H. Fletcher	Maryland,	Cholera Infantum.

At a commencement held July 3d, 1846, the Degree of Doctor of Medicine was conferred upon the following candidates.

NAME.	STATE.	SUBJECT OF ESSAY.
William H. Benson,	S. Carolina,	Flatulent Cholc.
James C. Bowen,	Georgia,	Hæmorrhage.
Isaac Coles,	Virginia,	Dyspepsia.
Albert James Hoag,	Pennsylvania,	Human Constitution.
Andrew Porter,	Pennsylvania,	Dysentery.
George W. Ruffin,	N. Carolina,	Intermittent Fever.
William D. Stroud,	Pennsylvania,	Iodine.
TOTAL, 163.		

W. E. HORNER,
Dean of Medical Faculty.

Graduates of Jefferson Medical College of Philadelphia, March, 1847.
—At a Public Commencement held on the 25th of March, 1847, the Degree of Doctor of Medicine was conferred on the following gentlemen, by the REV. C. C. CUYLER, D. D., in the absence of the REV. ASHBEL GREEN, D. D., L. L. D., President of the Institution; after which a Charge to the Graduates was delivered by Professor DUNGLISON.

NAME.	STATE.	SUBJECT OF THESIS.
Addison, Robert K.	New Brunswick,	General Relations of the Organs of the Human Body.
Ashley, William	Georgia,	The Pulse.
Atkinson, Edward C.	Pennsylvania,	Conception.
Baker, Andrew J.	New Hampshire,	Effects of Kindness and Mental Emotions on Health and Disease.
Barbar, John E.	Pennsylvania,	Intermittent Fever.

NAME.	STATE.	SUBJECT OF THESIS.
Barclay, Michael W.	Virginia,	Iodine.
Bates, Solomon A.	Virginia,	Cholera Infantum.
Beale, Stephen T.	Pennsylvania,	Caries of the Teeth.
Bell, William S.	Tennessee,	Carcinoma of the Mamma.
Billups, Robert A.	Alabama,	Cutaneous Absorption.
Blackburn Joseph W.	Pennsylvania,	Bronchocele.
Boone, James	Maryland,	Phenomena of Death.
Bournonville, Aug. C. H.	Pennsylvania,	Tetanus.
Bourtelle, Nathaniel R.	Maine,	Cynanche Trachealis.
Briceland, J. Milton	Virginia,	Pleuritis.
Briggs, Henry C.	Virginia,	Intermittent Fever.
Brown, Marcus A.	Ohio,	Present Spirit of Medical Inquiry.
Burton, John J.	Virginia,	Hysteria.
Byers, William J.	Pennsylvania,	Acute Hepatitis.
Carter, John	Virginia,	Fractures.
Chambers, William H.	Virginia,	Urethritis.
Chapman, Charles G.	Connecticut,	Jaundice.
Clapp, William A.	Indiana,	Scrofula.
Clarke, John E.	North Carolina,	Dysentery.
Clary, Charles S.	Kentucky,	Congestive Fever.
Cobb, Benjamin F.	North Carolina,	Placenta Prævia.
Cobb, Henry	Virginia,	The Atmosphere.
Coleman, James W.	Virginia,	Purpura.
Craige, Thomas W.	Pennsylvania,	Treatment of Variola.
Curtis, Levi	Connecticut,	Human Reproduction.
Dawson, John	East Indies,	Philosophy of Medicine.
De Hart, John N. E.	Louisiana,	Gonorrhœa.
Derr, Rufus M.	Virginia,	Scrofula.
Dillard, Peter H.	North Carolina,	Intermittent Fever.
Dowell, Greensville	Tennessee,	The Blood.
Dubois, John Treon	Ohio,	Malaria of the Miami Valley.
Eastman, Henry	New Hampshire,	Causes influencing the Action of Therapeutic Agents.
Edwards, James	Pennsylvania,	Inflammation.
Eichelberger, Lewis S.	Virginia,	Pneumonia.
Eliason, Talcott	Virginia,	Coxalgia.
Few, Samuel F.	Virginia,	Phenomena of Labour.
Flippen, Marion J.	Virginia,	Atonic Dyspepsia.
Floid, James B.	Virginia,	Acute Peritonitis.
Folsom, Lewis A.	Georgia,	Intermittent Fever.
Foulke, George W.	Pennsylvania,	Diagnosis of Typhoid Fever.
Franklin, George A.	Maryland,	Intermittent Fever.
Fuller, Smith	Pennsylvania,	Gastritis.
Funkhouser, David	Virginia,	Delirium Tremens.
Gaines, James S.	Tennessee,	Hysteria.
Garlick, John W.	Virginia,	Anasarca.
Gayle, Charles M. S.	Virginia,	Phlegmasia Dolens.
Geiger, Henry	Pennsylvania,	Vis Medicatrix Naturæ.
Gibbon, Robert	North Carolina,	Uterine Hemorrhage.
Glassell, Albert S.	Virginia,	Causes and Treatment of Intermittent Fever.
Glentworth, William W.	Pennsylvania,	Modus Operandi of Medicines.
Gosweiler, Martin H.	Pennsylvania,	Acute Rheumatism.
Hackett, Thomas	Maryland,	Erysipelas.
Hancock, Francis W.	Virginia,	Pneumonia.
Harry, Benjamin F.	Pennsylvania,	Bilious Remittent Fever, as it prevailed in Franklin Co., Pa.
Hawkins, Alexander B.	North Carolina,	Gastro-enteritis.
Hilbish, Daniel J.	Pennsylvania,	Erysipelas.
Hogg, Thomas D.	North Carolina,	Iritis.
Hollingsworth, Joseph	North Carolina,	Bilious Remittent Fever.
Hough, De Witt C.	Pennsylvania,	Symphlocarpus Fœtidus.
Hunton, George W.	Virginia,	Rubeola.
Hupp, John C.	Pennsylvania,	Traumatic Hemorrhage.
Hutcheson, Thomas D.	Georgia,	Scarlatina.
Irwin, Crawford	Pennsylvania,	Iodine.

NAME.	STATE.	SUBJECT OF THESIS.
Jackson, Isaac	Pennsylvania,	Scarlatina.
Jackson, James C.	New Hampshire,	Progress of Early Medical Science.
Jameson, Samuel D. M.	Maryland,	Gout.
Joy, Horatio N.	New York,	Pneumonia.
Keeney, Jackson P.	Pennsylvania,	Influence of Cold.
Kerr, John G.	Ohio,	Reflex Functions of the Spinal Cord.
Kilby, John T.	Virginia,	Dyspepsia.
Kincaid, John	South Carolina,	Modus Operandi of Nervines.
Kurtz, William J.	Virginia,	Intermittent Fever.
Lamb, William D.	Massachusetts,	Physical Diagnosis of Pneumonia and Pleuritis.
Lewis, Joseph Addison	Missouri,	Puerperal Peritonitis.
Lindsay, Horace F.	North Carolina,	Remittent Fever.
Linn, Alexander E.	Pennsylvania,	Vaccinia.
Locke, Samuel T.	New Jersey,	Is Phthisis contagious?
Lyon, Emory	Massachusetts,	Rubeola.
M'Chesney, William S.	Virginia,	Mania à Potu.
M'Clenahan, Thomas J.	Maryland,	Lithuria.
M'Cullough, Thomas P.	Ohio,	Bilious Remittent Fever.
M'Ferran, Joseph A.	Delaware,	Intermittent Fever.
M'Guigan, William W.	Pennsylvania,	Differential Diagnosis of Typhoid and Typhus Fever.
M'Kenney, Jackson L.	Virginia,	Acute Hepatitis.
Marshall, John H. T.	Maryland,	Dyspepsia.
Marshall, William	Delaware,	Emetics.
Martin, George	Virginia,	Electro-negative Bodies.
Meeteer, William H.	Delaware,	Relation between Pulmonary and Cardiac Disease.
Mehard, Samuel S.	Pennsylvania,	Croup.
Miller, James L.	South Carolina,	Insanity.
Miller, Langdon	Mississippi,	Typhoid Fever.
Milner, Jesse L.	Virginia,	Iodine and its Medicinal Properties.
Moore, Bird	Tennessee,	Intermittent Fever.
Moore, John R.	Virginia,	Phrenitis.
Murdoch, Andrew C.	Ireland,	Signs of Pregnancy.
Neff, Benjamim	Ohio,	Rational Medicine.
Nisbet, John T.	Georgia,	Cynanche Trachealis.
O'Farrell, Henry T.	New York,	Influence of the Mind upon the Body.
O'Rorke, James	Pennsylvania,	Dyspepsia.
Patterson, Ashmore P.	Pennsylvania,	Study and Practice of Medicine.
Patterson, Robert M.	Georgia,	Delirium Tremens.
Patton, Thomas	Virginia,	Mineral Springs of Western Virginia.
Pendleton, Samuel H.	North Carolina,	Theses.
Perkins, W. Charles	Delaware,	Scarlatina.
Polk, Thomas G.	Tennessee,	Lithotomy.
Pratt, Bryce M.	Virginia,	Scarlatina.
Quinby, Watson F.	Delaware,	Heat and Motion.
Reading, John R.	Pennsylvania,	Influence of the Uterus over the Female Economy.
Reed, Joseph A.	Pennsylvania,	Pneumonia.
Reid, John	Canada West,	Spontaneous Aneurism.
Richardson, John	Pennsylvania,	Typhoid Fever.
Riely, John D.	Virginia,	Uterine Hemorrhage.
Rochelle, John R.	Virginia,	Intermittent Fever.
Rouanet, William P.	Louisiana,	Typhoid Fever.
Royer, B. Franklin	Pennsylvania,	Traumatic Hemorrhage.
Russell, William A.	Tennessee,	Morbus Brightii.
Rutter, John R. Barton,	Pennsylvania,	Acute Pleuritis.
St. Clair, Thomas	Pennsylvania,	Dysentery.
Scott, Isaac	Virginia,	Acute Dysentery.
Scroggs, Andrew A. Jr.	North Carolina,	Calorification.
Shelmerdine, Robert Q.	Pennsylvania,	Neuralgia.
Sinex, William G.	Indiana,	Hemorrhage.
Smith, Elias Ely	Pennsylvania,	Icterus.

NAME.	STATE.	SUBJECT OF THESIS.
Smith, James Dickinson	Georgia,	Mutual Relation between the Cardiac and Pulmonary Organs.
Smith, Robert M.	Georgia,	Tetanus.
Spears, Thomas M.	Virginia,	Acute Peritonitis.
Spencer, James L.	Virginia,	The Urine.
Stark, Horatio	Mississippi,	Progress of Medicine.
Starry, John D.	Virginia,	Scarlet Fever.
Stephenson, Robert G.	Pennsylvania,	Intermittent Fever.
Steptoe, Henry C.	Virginia,	Typhoid Fever.
Stith, Robert A.	Virginia,	Delirium Tremens.
Stokes, Josiah H.	South Carolina,	Gonorrhœa.
Strout, Daniel M.	New Jersey,	Epilepsy.
Strong, John M.	South Carolina,	Quinia a Sedative.
Sudler, William J.	Maryland,	Congestive Remittent Fever.
Thom, Allan C.	Virginia,	Uterine Hemorrhage.
Tingley, William H.	Pennsylvania,	Traumatic Hemorrhage.
Tinsley, Thomas	Virginia,	Congestive Remittent Fever.
Torrey, Noah	Massachusetts,	Phthisis Pulmonalis.
Trafton, Charles T.	Maine,	Hepatitis.
Trammell, Appling D.	Alabama,	Sthenic Hyperæmia.
Trenchard, J. Franklin	New Jersey,	Vis Medicatrix Naturæ.
Turner, Thomas H.	North Carolina,	Theses.
Turpin, Thomas J.	Virginia,	Scarlatina.
Van Buskirk, William A.	Pennsylvania,	Cholera Infantum.
Van Valzah, Thomas	Pennsylvania,	Puerperal Convulsions.
Van Voorhis, John S.	Pennsylvania,	Peculiarities of the Female System.
Walker, Calvin H.	Tennessee,	Typhoid Fever.
Walling, Willoughby	Kentucky,	Erysipelas.
Wallop, William J. H.	Virginia,	Acute Rheumatism.
Ward, Isaiah	Pennsylvania,	Luxations.
Wathen, Athanasius	Indiana,	Acute Gastritis.
Watkins, Henry A.	Virginia,	Therapeutical Properties and Applications of Mercury.
Watson, Edward H.	Pennsylvania,	Granular Degeneration of the Kidney.
Weaver, John	Pennsylvania,	Psychology in its relations to Medicine.
Wentworth, George W.	New Hampshire,	Inflammation.
Wheeler, Claudius B.	North Carolina,	Fermented Liquors and Tobacco.
Wheat, Thomas	New Hampshire,	Anchylosis.
Whiteside, Philip S. P.	Pennsylvania,	Intermittent Fever.
Wiley, George	New Jersey,	Apoplexy.
Williams, Elisha	North Carolina,	Acute Laryngitis.
Williams, George M.	Georgia,	Diagnosis of Scarlatina.
Williams, James	Tennessee,	Physiological Effects of Cold Water.
Williams, Willis A.	Virginia,	Urethritis.
Wilkings, William C.	North Carolina,	Scarlatina.
Wilson, Richard T.	Virginia,	Diatheses of Gout, Rheumatism and Urinary Calculi.
Wilson, James R.	Tennessee,	Circulation of the Blood.
Wimley, George W.	Pennsylvania,	Variola.
Wortham, Robert T.	Virginia,	Circulation.
Yates, La Fayette	Kentucky,	Syphilis and Gonorrhœa.
Yerkes, Harman	Pennsylvania,	Influence of Civil Life on Health.

The degree of Doctor of Medicine was also conferred on Benjamin F. Keene, of Georgia, and Abraham H. Baker, of Ohio; and the *ad eundem* degree of Doctor of Medicine on Robert C. Martin, M. D., of North Carolina, and William J. Weaver, M. D., of Indiana.

Number of Graduates, 181.

Number of Students, session 1846-47,—493.

ROBERT M. HUSTON, M. D.,
Dean of the Faculty,
No. 1 Girard Street.

CARPENTER'S COMPOUND FLUID EXTRACT OF SARSAPARILLA.

It is now near twenty years since the proprietor introduced this preparation to the attention of the Medical Faculty, which received the immediate and especial notice of physicians in all parts of the United States, and established a character and reputation which its merits seemed to warrant. He gave it the name of Fluid Extract to distinguish it from the Compound Syrup of Sarsaparilla, which was the only official preparation used in the medical practice of the United States. The superiority of the Extract, being a much more concentrated preparation and of uniform strength, requiring a much smaller dose and avoiding the necessity of sugar, of which the syrup was almost entirely made up, gave to it a very decided advantage over that preparation, and procured for it a high character which has lasted to this day.

Professor Gibson of the University of Pennsylvania, was one of the first to prescribe it in hospital practice, and was so much pleased with its effects that he recommended it in his lectures to the medical class and pronounced it a very superior preparation.

Professor Eberle, in the last edition of his Therapeutics, vol. ii. p. 206, makes the following remarks: "Carpenter's Compound Fluid Extract of Sarsaparilla is a very neat and excellent preparation. It possesses all the active properties of the root in a highly concentrated state, a tablespoonful being equivalent to a pint of the ordinary decoction. I have used it in several instances with decided benefit. From the smallness of the dose it is peculiarly adapted for administering this remedy to children," &c.

Professor Frost, of the Medical College of South Carolina, writes on the beneficial effects of this preparation, united with small doses of perchloride of mercury in cases of secondary syphilis, and his high opinion of this medicine and its superior advantages over the ordinary preparations of sarsaparilla.

Professor Dewees, in his Practice of Medicine, also speaks of this preparation in the most commendable manner.

A large number of letters have also been received from physicians of the highest standing and celebrity in various parts of the United States, testifying in the most decided manner, their preference for Carpenter's Fluid Extract of Sarsaparilla.

It has been also introduced in most of the hospitals and infirmaries, into the army and navy of the United States, and orders come for it from various foreign countries; so that the medicine was put up in the French, Spanish and Portuguese languages. Perhaps no medicine ever introduced to public attention had acquired so high a celebrity, or was so universally appreciated.

The unexampled demand had the natural tendency of bringing out a host of competitors, most of whom at once seized upon the name, the size and shape of the bottle, the form of direction, and counterfeited everything as near as they could to external appearance, and pushed their imitations where they could as a substitute for Carpenter's. Many of those preparations were entirely different in composition. Some were spirituous tinctures, some syrups, and others without any trace of the preparation. The introduction of these imitations and inferior preparations all over the country, has had a tendency of diminishing the confidence which the faculty entertained in the curative powers of the sarsaparilla itself, when G. W. Carpenter's preparation was first introduced. There can scarcely, however, be a doubt of the value of Sarsaparilla as a remedial agent in several inveterate and intricate diseases.

An interesting paper is published in the Medico-Chirurgical Review, for July, 1830, on the subject of the Extract of Sarsaparilla in Venereal Affections, by Benjamin Travers, F.R.S., &c. Speaking of syphilis and diseases arising from the excess of mercury, he states, "*that no remedy next to the adjustment of diet is equal to the Extract of Sarsaparilla; its power is extraordinary, more so than any other drug I am acquainted with. It is, in the strictest sense a tonic, with this invaluable attribute, that it is applica-*

ble to a state of the system so sunken, and yet so irritable, as renders other substances of the tonic class unavailable or injurious."

We take the liberty of marking in italics, says the distinguished editor, Dr. Johnson, "the passage respecting Sarsaparilla, because we most cordially concur with Mr. Travers in the statement which it contains in favour of the extract of Sarsaparilla."

Numerous other authorities of the highest respectability could be cited in reference to the valuable properties of the Sarsaparilla, which want of space in this short description of it forbids.

The proprietor still continues to manufacture his Fluid Extract of Sarsaparilla as originally made when its reputation and sale was so extensive, and he hopes the faculty will continue to prescribe it. It is prepared expressly for the use of the physician in his practice, and will be found a great convenience to him. The decoction is exceedingly troublesome, as it is necessary to prepare it fresh every day, and the syrup is still more objectionable, as it is weaker than the decoction, for a fluid saturated with sugar is incapable of holding in solution as much extracted matter as water alone—and the syrup is otherwise still more objectionable, for the patient is frequently nauseated, and his stomach surfeited by the large proportion of saccharine matter he is obliged to take with each dose of sarsaparilla, and which is introduced in the preparation simply to keep the decoction from spoiling.

Under all these circumstances the proprietor hopes to receive from the faculty a continuation of their orders and prescriptions for his Compound Fluid Extract of Sarsaparilla, and for the convenience of southern physicians an Agency has been established at New Orleans, which has been confided to W. F. VREDENBURGH & Co., an extensive commission house of that city, and the supply for the Northern, Eastern, and Western States will be at

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TO READERS AND CORRESPONDENTS.

We have received a note from Dr. C. W. Pennock, expressive of much regret that, whilst acknowledging the aid given him by the Resident Physicians of the Philadelphia Hospital, Blockley, in reference to the observations *On the Pulse and Respiration of the Aged*, (published in the July number of this Journal,) the name of Dr. DAVIS, of Virginia, who was attached to the hospital at the time of the investigation alluded to, and to whose assistance Dr. Pennock "feels deeply indebted," should have been omitted.

Our last Number (p. 127) contained a paper by Dr. George K. Pardee, of Ohio, describing some cases which he supposed were examples of scarlatina, but which, by others who saw them, were believed to be produced by poisoning. Since the publication of that paper, we have received a visit from Dr. ALEX. FISHER, of Western Star, Summit Co., Ohio, who states that all these cases, except the last, occurred in his practice, and he has furnished us with his notes of the cases, and of the post-mortem appearances, which differ very materially from the account given by Dr. Pardee. He also asserts that scarlatina did not subsequently prevail epidemically in the town.

Dr. Fisher has recently transmitted to us, at our request, some of the berries, such as were eaten by the subjects of the cases, and which prove to be, not the fruit of the *Solanum dulcamara*, but of the *Celastrus scandens*.

These berries we submitted to our friend, Dr. R. E. GRIFFITH, an accomplished botanist, who has sent us the following note respecting them.

Dear HAYS:—

The berries you placed in my hands, are those of the *Celastrus scandens*, a climbing plant, belonging to Celastraceae.—5—1 or, more properly, 5—3 sex. syst., as the style is a compound one, having 3 stigmas. It is called, in different parts of the country, Bitter sweet, Wax-work, Red root, &c. It has, somewhat, the properties of the *solanum dulcamara*, being emetic, discutient, diuretic, and somewhat narcotic; it has some reputation in domestic practice, and is also employed by the Thompsonians. (See Griffith's Med. Bot., 219.) Several other species are stated by March and Delens to be active. There is no doubt that these berries are capable of inducing unpleasant symptoms, as those of the *Enonymus*, a closely allied genus, are eminently purgative, emetic, &c. Yours, truly,

R. E. GRIFFITH.

The following works have been received:

Report on the Fever at Boá Vista, by Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their address of the 16th March, 1847. London, pp. 112, folio. (From the Author.)

Letter addressed by Sir WILLIAM PYM to the Lords of the Council, relative to a report on the fever of Boá Vista, by Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their address of May 14th, 1847. London, pp. 16, folio. (From Dr. McWilliam.)

A System of Surgery, by J. M. CHELIUS, M. D., Prof. of General and Ophthalmic Surgery. Translated from the German, and accompanied with additional notes and observations. By JOHN F. SOUTH, late Professor of Surgery to the Royal College of Surgeons of England: 3 vols. 8vo. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

On Diseases of the Skin. By ERASMUS WILSON, M. D., Lecturer on Anat. and Phys., &c. &c. Second American, from the second London edition. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

Lectures on the Principles and Practice of Physic; delivered at King's College, London. By THOMAS WATSON, M. D., F. R. C. P., &c. &c. Third American, from the last London edition, revised, with additions, by D. FRANCIS CONDIE, M. D., &c. &c. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

The Mutations of the Earth; or an outline of the more remarkable physical changes of which, in the progress of time, this earth has been the subject, and the theatre: including an examination into the scientific errors of the author of the Vestiges of Creation. Being the Anniversary discourse for 1846, delivered in the Chapel of the University, before the Lyceum of Natural History of New York, and printed at the request of the Society. By JOHN AUGUSTINE SMITH, M. D., first Vice President of the Institution. New York, 1846. (From the Author.)

Principles of Human Physiology, with their chief applications to Pathology, Hygiène, and Forensic Medicine. By WILLIAM B. CARPENTER, M. D., F. R. S., Fullerian Prof. of Phys. &c. &c. &c. Third American, from the last London edition. With notes and additions, by MEREDITH CLYMER, M. D., Consulting Physician to the Philadelphia Hospital, &c. &c. &c. With three hundred and seventeen wood-cuts, and other illustrations. Philada., Lea and Blanchard, 1847.

On the Pathology and Treatment of Dysentery; being the Gulstonian Lectures delivered at the College of Physicians, in Feb. 1847. By WM. BALY, M. D., Phys. to the Milbank Prison, &c. &c. London, 1847. (From the Author.)

Discourses on Medical Education, and the Medical Profession. By JOHN WARE, M. D., Hersey Professor of the Theory and Practice of Physic in the University of Cambridge. Boston, 1847. (From the Author.)

An Address delivered at the Castleton Medical College, introductory to the autumnal session of 1847. By WM. SWEETSER, M. D., Professor of the Theory and Practice of Medicine. Published by the class. Troy, 1847. (From the Author.)

Handbuch der Allgemeinen und Speciellen Chirurgie. Von Dr. A. WERNHER, Prof. de Chirurgie und pathologischen Anatomie. 3 and 4 heft. Giesen, 1846. (From Dr. Oppenheim.)

Reisehandbuch für Aertze und Naturforscher, zugleich als Versuch eines Wörterbuchs der medizinischen Geographie. Von WILHELM STRICKER, M. D. Erlangen, 1845. (From Dr. Oppenheim.)

Andeutungen über Ventilation eine andrede an gebildete Richtarzte. Von G. SIEVELING, M. D. Hamburg, 1846. (From Dr. Oppenheim.)

Lectures on subjects connected with Clinical Medicine. By P. M. LATHAM, M. D. Second edition. Philada., Barrington and Haswell, 1847. (From the Publishers.)

Annual Report of the Regents of the University of the State of New York. Made to the Legislature, April 24th, 1847. Albany, 1847. (From Dr. T. R. Beck.)

Proceedings of the Medical Convention assembled in Frederick, June 2d, 1847, with the Constitution and By-Laws of the Medical Society of Frederick County, auxiliary to the Med. Chirurg. Faculty of Maryland. Frederick, 1847.

Introductory Lecture delivered to the Medical class of the Berkshire Medical Institution, Aug. 5th, 1847. By Prof. DEWEY. Pittsfield, 1847. (From the Author.)

Review of Dr. M. Gay's statement of Dr. Charles T. Jackson's claims to the discovery of the inhalation of Sulphuric Ether, as a preventive of pain. By J. B. S. JACKSON, M. D. Boston, 1847. (From the Author.)

On the Pathological and Physiological effects of Ethereal Inhalation. With an appendix, containing an additional case, and experiments. By BUCKMINSTER BROWN, M. D. Boston, 1847. (From the author.)

Some account of the Letheon: or who is the discoverer? By EDW. WARREN. Third edition, revised and enlarged. Boston, 1847. (From the Author.)

Annual Circular and Catalogue of the Medical Department of the University of Buffalo. Buffalo, 1847.

Catalogue of the Trustees, Faculty, and Students of the Medical College of the State of South Carolina, Session 1846-7. Charleston, 1847.

Catalogue and Annual Announcement of Willoughby Medical College of Columbus, 1847.

Eighth Annual Announcement of the Baltimore College of Dental Surgery. Baltimore, 1847.

The Reply and Comments of Dr. BYBEE to the Charges and Specifications of six of the Memphis Medical College. Memphis, 1847.

The following Journals have been received in exchange:—

Zeitschrift für die gesammte Medicin, herausgegeben. Von F. W. OPPENHEIM. Aug., Sept., Oct., Nov., Dec., 1846. Jan., Feb., March, April, May, 1847.

Adolph Hencke's Zeitschrift für die Staats-arzneikunde fortgesetzt. Von Dr. A. SIEBERT, Bd. 52, heft 3 and 4, and Bd. 53, heft 1 and 2.

Klinick. Tijdschrift voor Wetenschappelijke Geneeskunde Uitgegeven door Dr. C. GOBEE. 1 Deel, 1, 2, 3, 4, 5, 6 stuck. 2 Deel, 1, 2, 3, 4 stuck.

Nieuw Archief voor Binnen-buitentandsche geneeskunde in haren geheelen omvang door Dr. J. VAN DEEN. 1 Deel, 5 stuck.

The Edinburgh Medical and Surgical Journal. July, 1847.

The Medico-Chirurgical Review. July, 1847.

The British and Foreign Medical Review. Edited by JOHN FORBES, M. D. July, 1847.

The London Medical Gazette. June, July, Aug., 1847.

The Retrospect of Medicine: Being a half-yearly Journal, containing a retrospective view of every discovery and practical improvement in the Medical Sciences. Edited by W. BRAITHWAITE, Jan. to June, 1847.

The Half-Yearly Abstract of the Medical Sciences: Being a Practical and Analytical Digest of the contents of the principal British and Continental Medical works published in the preceding six months. Together with a series of critical reports on the progress of medicine and the collateral sciences during the same period. Edited by W. H. RANKING, M. D. Jan. to June, 1847.

Dublin Medical Press. June, July, August, 1847.

Provincial Medical and Surgical Journal. Edited by R. J. N. STREETEN, M. D., F. R. S. June, July, August, 1847.

Medical Times. June, July, August, 1847.

The Dublin Quarterly Journal of Medical Science. May, 1847.

The British American Journal of Medical and Physical Science. Edited by ARCHIBALD HALL, M. D. July, August, Sept., 1847.

Australian Medical Journal. Sidney, Nov. 2d, 1846.

Southern Medical and Surgical Journal. Edited by PAUL F. EVE, M. D., July, Aug., Sept., 1847.

The American Journal of Science and the Arts. Conducted by Prof. B. SILLIMAN, B. SILLIMAN, Jr., and JAMES D. DANA. July, Sept., 1847.

Illinois and Indiana Medical and Surgical Journal. July, Aug., Sept., 1847.

The Western Journal of Medicine and Surgery. Edited by Drs. DRAKE, YANDELL, and COLESCOTT, July, Aug., Sept., 1847.

The Missouri Medical and Surgical Journal. Edited by THOMAS BARBOUR, M. D., and A. J. COONS, M. D. July, Aug., Sept., 1847.

The New Orleans Medical and Surgical Journal. Edited by Drs. CARPENTER, FENNER, HARRISON, and HESTER. July, Sept., 1847.

The New York Journal of Medicine, and the Collateral Sciences. Edited by CHARLES A. LEE, M. D. July, Sept., 1847.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON and MCPHEETERS. Vol. V., Nos. 1 and 2.

The Medical Examiner and Record of Medical Science. Edited by R. M. HUSTON, M. D. July, Aug., Sept., 1847.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by JOSEPH CARSON, M. D., &c. Aug., 1847.

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science. Edited by AUSTIN FLINT, M. D., July, Aug., Sept., 1847.

The American Journal and Library of Dental Science. June, 1847.

The Annalist; a record of Practical Medicine, in the city of New York. Edited by WM. C. ROBERTS, M. D. July, Aug., Sept., 1847.

The Western Lancet and Medical Library. Edited by L. M. LAWSON, M. D. July, Sept.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XXVIII. NEW SERIES.

OCTOBER, 1847.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART.	PAGE
I. Statistics in Midwifery. By Jno. G. Metcalf, M. D., M. M. S., Member of the American Statistical Association of Mendon, Massachusetts. -	295
II. A very early Human Ovum, presenting the ununited folds of the blastoderma about to form the amnios. By Myddleton Michel, M. D., Lecturer on Anatomy and Physiology, Charleston, South Carolina, [with a plate.]	330
III. Isopathia; or, the Parallelism of Diseases. By John M. B. Harden, M. D., of Liberty County, Georgia; Correspondent of the Academy of Natural Sciences, Philadelphia, &c. -	339
IV. Amputation above the Shoulder-joint. By David Gilbert, M. D., (of Gettysburg, Pa. :) Prof. of Surgery in Medical Department of Pennsylvania College, Philadelphia. -	360
V. Osteo-Sarcoma of the Lower Jaw. Removal of the body of the bone without external mutilation. By J. Marion Simms, M. D., of Montgomery, Ala. -	370
VI. Observations on Yellow Fever. By E. H. Kelly, M. D., of Mobile, Ala.	373
VII. Researches upon the Structure and Functions of the Ciliary Processes. By R. Fraser Michel, M. D., Charleston, S. Carolina. -	393
VIII. Case of Partial Occlusion of the Os Uteri, during the third difficult labour of the Patient. Incision of the Os Uteri. Read before the Boston Society for Medical Observation, October 19th, 1846. By Charles E. Buckingham, M. D. -	400
IX. Radical Cure of Hernia by including the Neck of the Sac and External Ring in a Lead Ligature. By J. C. Nott, M. D., of Mobile, Ala. -	402
X. Case of Erysipelas Phlegmonoides. By E. J. Bee, M. D., Assistant Surgeon, U. S. Navy. -	405
XI. Case of William Freeman, the Murderer of the Van Nest Family. By Blanchard Fosgate, M. D., of Auburn, N. Y. -	409

REVIEW.

XII. Report on the Fever at Boâ Vista. By Dr. McWilliam. Presented to the House of Commons, in pursuance of their Address of the 16th of March, 1847. London, 1847. Folio, pp. 112.	
Letter addressed by Sir William Pym to the Lords of the Council, relative to a Report on the Fever at Boâ Vista, by Dr. McWilliam. Presented to the House of Commons, in pursuance of their Address of May 14, 1847. London, 1847. Folio, pp. 16. -	415

BIBLIOGRAPHICAL NOTICES.

ART.	PAGE
XIII. Practical Observations on some of the Diseases of the Stomach and Alimentary Canal. By James Alderson, M. D., F. R. S., Fellow of the Royal College of Physicians; late Senior Physician to the Hull General Infirmary, &c. London, 1847: 8vo. pp. 215. - - - - -	429
XIV. 1. Annual Report of the Medical Superintendent of the Temporary Provincial Lunatic Asylum, at Toronto, (Canada West,) from April 1st, 1846, to March 31st, 1847. Toronto, 1847.	
2. Thirtieth Annual Report of the State of the Asylum for the Relief of Persons deprived of the Use of their Reason. Philadelphia, 1847.	
3. Report of the Superintendent of the New Hampshire Asylum for the Insane, for 1846, 1847. Concord, 1847.	
4. Twenty-sixth Annual Report for the Bloomingdale Asylum for the Insane. New York, 1847. - - - - -	436
XV. Illustrations of Medical Botany; consisting of Coloured Figures of the Plants affording the important articles of the Materia Medica, and descriptive Letter-Press. By Joseph Carson, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy; Member of the American Philosophical Society of the Academy of Natural Sciences of Philadelphia, Fellow of the College of Physicians, &c. &c. The Drawings on Stone, by J. R. Colen, No. 2. Philad., Robert P. Smith, 1847: 4to. - - - - -	439
XVI. Fifth Annual Report to the Legislature relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts. For the year ending April 30th, 1846. By John G. Palfrey, Secretary of the Commonwealth. - - - - -	439
XVII. Summary of the Transactions of the College of Physicians of Philadelphia. From Dec. 1846 to April 1847 inclusive: pp. 72, 8vo. - - - - -	440
XVIII. Report of the Committee on Medical Societies and Medical Colleges relative to the Bill proposing the establishment of an Asylum or School for Idiots, &c. - - - - -	442
XIX. Water <i>versus</i> Hydropathy; or an Essay on Water, and its true relations to Medicine. By Henry Hartshorne, M. D. 'Η δὲ τεχνὴ μακρῇ. 12mo. pp. 131: Philadelphia, 1847. - - - - -	444
XX. Lectures on the Principles and Practice of Physic; delivered at King's College, London. By Thomas Watson, M. D., F. R. C. P., &c. &c. Third American from the last London edition. Revised, with additions, by D. Francis Condie, M. D., Lec. Coll. Phys., &c. &c. Philadelphia: Lea and Blanchard, 1847: pp. 1040, 8vo. - - - - -	445
XXI. Essays, Anatomical, Zoological, Surgical, and Miscellaneous, reprinted from the Philosophical Transactions, Transactions of the Medico-Chirurgical Society of London, Dublin Philosophical Journal, Dublin Hospital Reports, Reports of the British Association for the Advancement of Science, and the Dublin Medical Press. By Arthur Jacob, M. D., F. R. C. S. J., Professor of Anatomy and Physiology, and Lecturer on Comparative Anatomy in the Royal College of Surgery in Ireland, &c. &c. Dublin, 1845: pp. 174. 8vo. Plates IV. - - - - -	445
XXII. On Diseases of the Skin. By Erasmus Wilson, F. R. S., Consulting Surgeon to the St. Pancras Infirmary, Lecturer on Anatomy and Physiology, &c. &c. Second American, from the Second London edition - - - - -	446
XXIII. Outlines of the Veins and Lymphatics: with short Descriptions. Designed for the use of Medical Students. By John Neill, M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. Philada.: Ed. Barrington and Geo. D. Haswell: 1847, pp. 29. Plates VIII. - - - - -	446

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

PAGE	PAGE
1. Death from an impermeable covering of the Skin. - - - 447	3. On the entrance of Insoluble Substances from the Intestinal Canal into the Blood-Vessels. By Prof. Oesterlen. - - - 448
2. On the Function of the Red Corpuscles of the Blood, and on the Process of Arterialization. By Geo. Owen Rees, M. D. - - - 447	4. Researches on the Nervous System. By M. C. Robin. - - - 449

ORGANIC CHEMISTRY.

5. Nature of the Colouring Matter of the Bile. By M. Blondlot. - 450	By Polli. - - - - 451
6. Colouring Matter of the Bile.	7. Detection of Mercury in the Pus from a Bubo. - - - - 451

MATERIA MEDICA AND PHARMACY.

8. Citrate of Magnesia as a Purgative. By M. Rage Delabarre. - 451	11. On the Properties of the Iberis Amara. By Dr. Silvester. - - 453
9. Dressing of Blisters. By Dr. D. Maclagan. - - - - 452	12. Electric Moxa. By Dr. Golding Bird. - - - - 454
10. Cusparia or Angustura. By Robert Dick, M. D. - - - - 453	13. Di-Arsenite of Quinine. By Dr. Kingdon. - - - - 454

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

14. Efficacy of Compression of the Epigastrium for the cure of Hiccup. By M. Rostan. - - - 455	ment. By Dr. Begbie. - - - 464
15. Scurvy. By Dr. O. B. Bellingham. - - - - 455	22. A few Hints on Constipation. By Dr. Robert Dick. - - - 465
16. On the Varieties of Headache. By Dr. Samuel Wright. - - - 459	23. Case of Jaundice — Fungous Growth round the Orifice of the Ductus Choledochus—Dilatation of the Hepatic Ducts in the Liver. By Dr. Stokes. - - - - 466
17. On the Semeiology of the Tongue. By Samuel Wright, M. D. - - - - 460	24. Obliteration of the Spermatic Ducts. By M. Gosselin. - - - 467
18. On the Use of Opium in Inflammation. By W. H. Ranking, M. D. - - - - 461	25. Sulphuric Ether in the Treatment of Intermittent Fevers. By Dr. Challeton. - - - - 468
19. On Subacute Inflammation of the Kidney. By John Simon, Esq. 463	26. Galvanism in Aphonia. - - - 468
20. Albuminous Urine produced by the use of Cantharides. By M. Bouillaud. - - - - 463	27. Effects of Electricity on the Human Organism. By M. Pallas. 468
21. On the Relations of Rheumatism and Chorea, and their Treat-	28. Benzoate of Ammonia in Gout. By Dr. Seymour. - - - - 469
	29. Binoxide of Mercury in Skin Diseases. By M. Ibreisle. - 469

	PAGE		PAGE
30. Treacle as a Local Remedy for Rheumatism. By Mr. Vines. -	470	deep Cauterization with Potassa Fusa. By Dr. Simpson. -	471
31. Influence of Quinine on the Volume of the Spleen in Ague. By M. Valleix. -	470	33. Death of a New-Born Child from Hypertrophy of the Thyroid Gland. -	471
32. Treatment of Inflammatory Induration of the Cervix Uteri by		34. Case of Ischuria Neonatorum. By Alois Bednar. -	472

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. Influence of the Laws of Gravity on Circulation and Local Inflammation. By Prof. Gerdy. -	472	by injections of a solution of Nitrate of Silver. By Dr. Robert L. Macdonnel. -	481
36. Wound of the Brain—Recovery. By M. Gintrac. -	473	46. Successful Extirpation of an Ovarian Tumour. By Dr. Woy-eikowski. -	483
37. Extensive Lacerated Wound of the Rectum and Bladder, produced by the Leg of a Chair. By Mr. Prescott Hewett. -	475	47. Vesico-vaginal Fistula. By MM. Roux, Velpeau and Lallemand. -	484
38. Tetanus following a lacerated Wound of the Cornea. By George Pollock, Esq. -	475	48. New Method of Treatment for Prolapsus Ani. By T. G. Hake, M. D. -	487
39. Treatment of Dissection-wounds. By Dr. Hargraves. -	476	49. Cold Water in cases of severe Burns. By Dr. Küsten. -	488
40. New Mode of bandaging Wounds and Stumps. By M. Baudens. -	476	50. Treatment of Burns with Treacle. By Mr. Bulley. -	489
41. Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle. By Robert Smith, Esq. -	477	51. Treatment of Erysipelas by Linen Blisters. By M. Piorry. -	489
42. Dieffenbach's new and successful Operation for Pseudarthrosis. By Dr. J. S. Bushnan. -	477	52. Hypertrophy of the Septum Nasi successfully treated. By M. Brulet. -	489
43. Vertical Dislocation of the Patella (de champ). By M. Payen. -	479	53. Sublingual Tumour.—Salivary Calculus.—Dilatation of Wharton's Duct. By M. Robert. -	490
44. Partial Dislocation of the Humerus and of the Femur. -	481	54. Tracheotomy in Croup. By M. Guersant. -	491
45. Treatment of Chronic Cystitis		55. Ascites cured by the Iodine Injection into the Peritoneal Cavity. By M. Leriche. -	491
		56. Purulent Infection. By M. Sedillot. -	491

OPHTHALMOLOGY.

57. Treatment of Scrofulous Inflammation of the Eye. By Prof. Jacob. -	492	59. Case of Encephaloid Disease of the Brain, inducing Amaurosis. By Mr. J. Dalrymple. -	496
58. Malignant Diseases of the Eye. By Dr. Dalrymple. -	496	60. Structure of Conjunctiva. By Arlt. -	497

MIDWIFERY.

61. Case of Delivery without operative aid, through a pelvis extremely deformed by Malacosteon. By Prof. Simpson. -	497	64. Spontaneous Evolution. By Dr. Keiller. -	503
62. Nature of the Membrana Decidua. By M. Coste. -	502	65. Cases of Fatal Hemorrhage from the Umbilical Vessels in Infants. By Dr. Simpson. -	504
63. Prevention of Abortion. By Dr. Griffin. -	503	66. Fatal Hemorrhage from the Umbilical Cord three days after Birth. By Dr. Keiller. -	504

	PAGE		PAGE
67. Fungus, or Fungating Excre- scences of the Umbilicus in In- fants. By Dr. Simpson. -	504	68. Albuminuria in Pregnant Wo- men. By M. Devilliers. -	505

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

69. New Test for Prussic Acid, and a simple method of preparing the Sulphocyanide of Ammonium. By Prof. Liebig. -	506	72. Poisons of the Assamese. -	508
70. On the two varieties of Arsen- ious Acid. By M. Bussy. -	506	73. Bronzing of Confectionary. -	508
71. Infanticide. -	507	74. Case of poisoning by Turpeth Mineral. By Dr. Letheby. -	508
		75. On the Essential Oil of Bitter Almonds. By R. B. Grindley. -	510
		76. Ledoyen's Disinfecting Fluid. -	511

ETHER INHALATION AS A MEANS OF ANNULLING PAIN.

§ 1. <i>Mode of Administering Ether, and Precautions to be observed.</i> -	512	§ 4. <i>Inhalation of Ether in Obstetri- cal Practice.</i> -	518
77. Rules for its administration. -	512	86. Applicability. -	518
78. Precautions for do. -	512	87. Application of Ether to Obstet- ric Practice. By Prof. Simpson. -	519
§ 2. <i>Physiological Action of Ether.</i> -	513	88. Ether Inhalation in Midwifery Practice. By Dr. Simpson. -	520
79. Experiments illustrating the Ef- fects produced by the Inhalation of Ether upon the lower Vertebrate Animals. By Holmes Coote, Esq., and Thomas Taylor, Esq. -	513	89. Inhalation of Ether in Mid- wifery Practice. By Baron Paul Dubois. -	521
80. Influence of Ether on Respira- tion. By M. Ville. -	514	90. On the Employment of Ethereal Inhalation in Midwifery. By Prof. Siebold. -	522
81. Morbid Appearances. -	514	91. Influence of Ethereal Inhalation on the Uterine Contractions. -	525
§ 3. <i>Employment of Inhalation of Ether in Surgical Practice.</i> -	514	92. Dr. Tyler Smith on the connec- tion of Ether with the Physiology of Parturition. -	525
82. Ill Effects of Ether. By Mr. Copeman. -	514	§ 5. <i>Present State of Opinion in re- gard to the use of Inhalation of Ether.</i> -	526
83. Injurious Effects of the Inhala- tion of Ether. By Dr. Pickford. -	515	93. Present state of opinion in re- gard to the Inhalation of Ether. -	526
84. Injurious Effects of Ether Inha- lation. -	517		
85. Ether Inhalation in Tetanus. By Dr. W. H. Ranking. -	518		

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Report of Cases of Typhus Fever, observed at the Lazaretto, near Philadelphia. By F. W. Sargent, M. D. -	529	Operations for Femoral Aneurism. By Charles Bell Gibson, M. D. -	535
		Case of Abscess of Bladder. By Laurence Turnbull, M. D. -	536

DOMESTIC SUMMARY.

On the Effects of Blisters on the Young Subject. By John B. Beck, M. D. - - - - 538	Surgical Treatment of Oedema of the Glottis. - - - - 543
Ligature of Primitive Carotid Ar- tery. By Dr. H. F. Campbell. - 542	Animal Ligatures. By Dr. W. T. Wragg. - - - - 544

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ART. I. — *Statistics in Midwifery.* By JNO. GEO. METCALF, M. D.,
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ALTHOUGH the word *statistics*, applied to medical subjects in a strict sense, only “relates to the detail of facts connected with the salubrity, mortality, &c., of different countries and situations,” yet, in spite of the lexicographers, it has come to have a much more extensive *conventional* signification. In the study of disease it is understood to comprehend the collection, arrangement and comparison of the symptoms, methods of treatment, termination, localities, &c.; while in midwifery, it deals with the classification of the phenomena and results of parturition.

Notwithstanding the cry, long and loud, against the numerical method of observation, by the coteremporaries of its author, there can be little doubt that it has materially aided in the establishment of a greater certainty in diagnosis, and of more expeditious and surer means of cure. The fame of the chief of La Pitié, we imagine, will long outlive the attacks of his opponents, upon his recommendation to study disease by clinical observation; and far down along the history of the great medical commonwealth of the world, Louis will stand out upon its pages “clarum et venerabile nomen.”

Books have been *written* upon the subject of midwifery from the periods of a remote antiquity; but before the invention of the art of printing, we shall, at once, perceive that whatever had been learned by the practitioners of our art, could never have been very widely diffused, and, consequently, that its progress must have been comparatively slow. Could the records of the Egyptian midwives, the essays of Cleopatra and Aspasia,

have been multiplied with the rapidity of modern art, who would doubt that the *torculum volvens* of Rhazes, or the rude forceps of Avicenna, had been arrived at some centuries earlier in the history of obstetrics? Could the author of the "*Liber Divisionum*" have set up a printing press in the city of Bagdad, who would stake his reputation as a prophet, that some Ambrose Paré had not conferred renown upon the metropolis of his country some cycles in advance of the Parisian reformer? Could Faust, or Caxton, or Wynkyn de Worde have flourished in the reign of the Caliphs, who would believe that the *impellens* and the *almisdach* of Albucasis had preceded, by almost the space of a thousand years, the finished instruments of a *Smellie* and a *Baudelocque*? Instead of waiting until the days of Edward the Second, John á Gaddesden had been gazetted as court physician in the times of the Saxon heptarchy, or commissioned as Surgeon-general in the army of the Norman Conqueror. Instead of procrastinating the publication of the *first printed* book, upon the subject of midwifery, until the middle of the sixteenth century, "*The Byrth of Mankynde, or the Woman's Booke,*" would have had its title-page antedated at least five hundred years, and its imprimatur issued from Ispahan instead of London.

With the printing press, the steam engine, and the magnetic telegraph for his antagonists, who will dare fix limits to the march of improvement in this nineteenth century? Thanks to a Faust, a Watt and a Morse, nothing can arrest the onward progress of the arts of civilization and refinement. By the aid of their inventions, knowledge, no longer hid beneath the arbitrary technicalities of monkish Latin, or the impenetrable mysteries of Chaldean hieroglyphics, is sown broad-cast, almost without money and without price, through the whole circumference of the habitable globe. In these latter times, as if by the wand of the magician, labour is changed to pastime, space is annihilated, and thought is endowed with the attribute of omnipresence. In sixty days, discoveries, made upon the banks of the Delaware, may be exerting their beneficial influences, for the cure of the Hindoo, upon the banks of the Ganges. Every sail that whitens the ocean by day, and every steamship which kindles her beacon-fires by night, upon its broad expanse, are freighted with the interchange of free thought and opinion and experience. Paris and London have become our next door neighbours; and we feel as if the minds which are giving direction to the talent and industry of these brilliant foci of medical improvement were our familiar friends.

Having our lot cast in such pleasant places, and living amid such a flood of professional light, let us take heed that we do not treasure up for ourselves the scorn of posterity; by the exercise on the one hand, of that fatuous conservatism, which adopts no improvement because it is new; and, on the other, of that reckless spirit of the radical, which demands that we raze everything to the foundation before it deigns impart to us the knowledge of the superstructure it will rear in its stead.

"Nullius addictus jurare in verba magistri," should be the motto of every seeker after medical truth. Nothing should be adopted or condemned upon the dicta of authority; nothing received or rejected but after patient, thorough and impartial investigation. Follow truth wherever she may lead; despising, on the one hand, that slavish submission to theory and hypothesis, which contents itself without farther attempt at progress; and, on the other, that criminal surrender to a shameless empiricism, which regards its wasteful sacrifice of human life only as a matter collateral, and subsidiary in its senseless search after panaceas and specifics.

But the limitless capabilities of the press, the engine and the telegraph are not *alone* sufficient to achieve the moral, physical, or intellectual regeneration of the world. Notwithstanding the immeasurable energies they operate with, theirs would be the labours of Sisyphus, as unavailing as they might be endless. To render them effective, mind, powerful, energetic and constant, must be brought into active co-operation. Advances from the old resting places must be made; something new and better and more practiced than the heir-looms of antiquity must be accomplished, or the printing press might as well have never superseded the parchment of the scribe, the steamship the primitive craft of the Argonauts, or the magnetic telegraph the mail in the days of Franklin.

To fulfil his duty, then, the *good* physician can be no idler. His is no sinecure position in society. No stewardship of the Chiltern Hundreds allows him to retire from the field of his labours with his laurels untarnished. Exemption from toil, inglorious ease, are terms which find no place in the vocabulary of *his* language. The close of pupilage sets up no terminus to study. It is but the pleasant preparation to a life of toil. To have won the diploma, with its blue ribbon and seal, is but the incipient stage in a long and rugged journey. There is something to do afterwards; something which, while it makes large drafts upon his physical powers, will, at times, task to the verge of utmost tension his every intellectual resource. Some things, too, besides books are to be attended to. The eye, the ear, and the sense of feeling, must be professionally cultivated. Individuality, causality and comparison must not be suffered to rust out in the criminal indulgence of inactivity. Duty to ourselves, our patients, to the profession, and to God, call on us to work while the day lasts.

But this is not all. The facts gathered up by experience, and the results of philosophical induction must not be trusted to the hazard and uncertainty of tradition or manuscript. The leaves of the sybil and the papyri of the copyist often perished before the memory of their authors. Of the five hundred thousand volumes, sacrificed to sectarian zeal, by the Arabian fanatic, who ever heard of a duplicate? It then becomes a duty that everything which will aid, however remotely, in the advancement of science, should be preserved with care. Copies should be multiplied, so that the truths of the original may be more widely diffused, and to guard against the contingency of their extinction by carelessness or accident.

And what if the offering we bring to the common treasury be small? If it affords *any additional* light, the insignificance of its value furnishes no sufficient reason for withholding it. The little spring which trickles from some narrow crevice upon the western slope of the Alleghanies goes to help swell the magnificent Mississippi. So with contributions to medical improvement; singly and alone they add but little to the stock of medical knowledge; but, by collocation and comparison, they furnish ample data from which numerous and invaluable practical results may be deduced. If no *monographs* had been written, the press, we imagine, would have found it no Herculean labour to have supplied the *books* for the physician's library. Medical *book-making*, (and we intend no disparagement by the term,) from the great multitude of materials which has been accumulating for centuries, has come, and necessarily so, to consist, *principally*, in the drudgery of compilation; requiring, we are ready to admit, no trifling amount of patient research and sound discrimination.

Endeavouring to add somewhat, if only a modicum, to the mass of knowledge already laid by in the garner of medical improvement; trusting that some useful truths may be more fully illustrated or more deeply impressed, the following contribution to an important branch of vital statistics is now offered for the consideration of the profession.

The following pages will contain an analysis of 927 cases of midwifery, 546 having occurred in my own practice. To my friends Dr. Southwick, of Blackstone, Dr. Field, of Leominster, Dr. Stone, of Hardwick, Dr. Workman, of Worcester, and Dr. Wheeler, of Paxton, I am indebted for the balance; 201 of which occurred in the practice of Dr. Southwick. They will accept my thanks for their kindness in allowing me to make use of them in the present communication. To Dr. Field, of Leominster, I am particularly obliged for his copious notes upon his cases of puerperal fever, and trust *he* will pardon me, as there can be no doubt *our readers* will, for the liberal drafts I have made upon them.

1. *The whole number of children.*—The 927 cases of delivery gave birth to 932 children; there being five cases of twins.

2. *Illegitimate children.*—Of the 927 mothers, 914 were married and 13 were not; thus furnishing a ratio of 1·4 for every illegitimate to every 100 children born in wedlock. Of the mothers having illegitimate children, two were widows, each with a family of five children. One belonged to the upper the other to the lower ten thousand in society. Of the others one was forty-three, and the remaining ten were all under twenty-three years of age.

3. *Age of the mother when married.*—Of the 927 mothers, their ages when married were ascertained in 568 instances. The following table will exhibit their ages; thus three were married at 14 years of age, and so on.

Age of 568 mothers when married.

Age,	14	15	16	17	18	19	20	21	22	23	24	25
No. of mothers,	3	3	23	61	70	56	73	58	43	41	40	29

Age,	26	27	28	29	30	31	32	33	35	36	38	41
No. of mothers,	23	14	10	4	6	4	2	1	1	1	1	1

The united ages of the 568 mothers amount to the sum of 11,991 years; thus furnishing the sum of 21 years and 11 hundredths as their average age, when married. By a law of this commonwealth males under twenty-one years of age, and females under eighteen cannot *legally* enter the marriage relation, without the consent of their parents or guardians. By an inspection of the foregoing table, we shall find there were 90 mothers who could not have been *legally* married without such consent.

The perpendicular lines, as will be seen, divide the *preceding* table into six equal periods of four years each. The *following* one exhibits the number of women married in each of the six periods; thus, during the first period, comprising the ages of 14, 15, 16 and 17, there were 90 women married, and so on.

<i>Number of women married in each period.</i>						
Periods,	1st.	2d.	3d.	4th.	5th.	6th.
No of women, 90	257	153	51	13	4	

From the data furnished by the foregoing table, the probabilities of marriage (so far as the limited number of cases, in the present paper, may be allowed to settle a matter of such grave import), may be calculated with a close approximation to the truth. The following table exhibits the percentage of the probabilities of marriage during each of the six periods of the preceding table. Thus, a woman, single at the *beginning* of each of the six periods, will have as many chances for matrimony during that period, as are expressed, by figures on the line immediately below.

<i>Chances of marriage during six periods.</i>						
Periods,	1st.	2d.	3d.	4th.	5th.	6th.
Per centage of chances,	16	45	27	9	2.3	.7

4. *Age of the patient when delivered.*—Of the 927 cases, the age of the patient, when delivered, was noted 591 times. The ages of the different women extend over a period from 14 to 46 years. The following table will show the distribution of the whole number of births occurring at different ages, and is to be read thus; one was delivered at 14 years of age, and so on.

<i>Age of 591 mothers when delivered.</i>															
Age,	14	15	17	18	19	20	21	22	23	24	25	26	27	28	29
No. delivered,	1	1	6	20	25	26	29	40	32	34	25	35	44	26	20
Age,	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
No. delivered,	18	22	20	18	17	24	14	13	11	11	4	7	4	5	1

As will be seen, the perpendicular lines divide the *preceding* table into eight equal periods of four years each. The *following* table will exhibit the number of deliveries in each of the periods; thus, during the first period, comprising the ages of 14, 15, 17, and 18, there were 28 deliveries, and so on of the other periods.

Number of deliveries in each period.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.
No. of deliveries,	28	120	126	126	78	68	33	12

To medical men the following table will be more curious than useful; while, to him who is conversant with last wills and testaments, and who is deep in the mysteries of "cross" and "contingent remainders," it may afford some useful hints. So far as the paucity of cases may be relied on to establish a rule, the calculation of the chances of pregnancy, exhibited in the following table, bating the fractions (which were not taken into the account) may be relied on as correct. The table is to be read thus:—a woman marrying at the *commencement* of either of the eight periods, will have as many chances, out of an hundred, of becoming pregnant, during that period, as are expressed by the figures on the line immediately below such period.

Chances of pregnancy.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.
Chances of pregnancy,	5	20	21	21	14	12	5	2

In Collins' Midwifery, a table is given of the ages of 16,385 women at the period of their delivery. His cases occurred, it will be remembered, in the wards of a Lying-in-Hospital, in a crowded city; they were furnished, principally, from the lower and poorer classes of society, and, consequently, should be expected to present somewhat different results when compared with the experience of private practice, where the patients were drawn from all classes of society, and who were located in a country region proverbial for its healthfulness. The following table is constructed for the facility of comparison, and is to be read thus: of 16,385 cases of delivery at Dublin, 5 per cent. occurred in patients under 20 years of age, and of 591 cases at Mendon, 9 per cent. occurred in patients under the same age, and so on.

Comparison of Dublin with Mendon.

Places of observation.	Under 20 years.	20 to 30 years.	30 to 40 years.	Over 40 years.
Dublin, Ireland,	5	62	30	3
Mendon, Mass.	9	52	33	6

5. *Whole number of pregnancies.*—Of the 927 cases, the whole number of times which each patient had been pregnant was ascertained in 916. They are arranged in the following table, and are to be read as follows, thus: 244 were 1st pregnancies, and so on.

Number of times each patient had been pregnant.

No. of pregnancy,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.
No. of patients,	244	197	141	111	80	56	28	17	13
No. of pregnancy,	10th.	11th.	12th.	13th.	14th.	16th.	17th.	20th.	
No. of patients,	10	8	4	2	2	1	1	1	

As may be determined by an inspection of the foregoing table, it will be seen that the aggregate pregnancies of the 916 patients were 3033; thus averaging three pregnancies and a fraction to each patient. While speaking of pregnancies in this connection, we shall be cautious about claiming

perfect accuracy; when we bring to mind the very great unwillingness which most women manifest to answer, when inquired of about the subject of abortion. All that can be claimed for this table is an approximation to the truth. For the fuller understanding of this subject, the following table exhibits the ratio of the different pregnancies to 1000 cases; and is to be read thus: in every 1000 cases, 266 will be 1st pregnancies, and so on.

Ratio of the different pregnancies to 1000 cases.

No. of pregnancy,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.
Ratio,	266	215	153	121	87	63	30	18	14
No. of pregnancy,	10th.	11th.	12th.	13th.	14th.	16th.	17th.	20th.	
Ratio,	11	8	4	2	2	1	1	1	

6. *The duration of labour.*—I am aware there is considerable difficulty in fixing the precise time when labour commences. Of any of the changes which may be supposed to occur before those recognised by the mother we know nothing. I have called the duration of a labour that interval of time which elapses between the incursion of pains which continue with short intermissions until the birth of the child; or between the rupture of the membranes and the same event.

Almost invariably, I have found that two or three loose dejections, pretty soon succeeded by pain in the pubic region, or low down in the back, were sure precursors of labour. Never, but in one case, have I known the beginning of labour protracted beyond twenty-four hours after the rupture of the membranes.

Of the 927 cases of labour, its duration was noted in 924 instances, as may be seen by the following table; and which is to be read thus: eight were delivered in one hour after the commencement of labour, and so on.

Duration of labour in 924 cases.

Hours in labour,	1	2	3	4	5	6	7	8	9	10	11	12	13	14
No. of women,	8	38	24	33	29	74	29	63	20	39	10	149	20	12
Hours in labour,	15	16	17	18	19	20	21	22	23	24	25	26	27	28
No. of women,	12	13	17	28	5	12	4	9	5	136	4	2	3	7
Hours in labour,	29	30	31	32	33	34	36	37	40	41	42	47	48	49
No. of women,	4	13	1	5	2	3	32	1	11	1	4	2	17	1
Hours in labour,	50	56	60	65	66	67	69	70	72	85	90	96		
No. of women,	2	5	4	2	1	1	1	1	2	1	1	1		

By the preceding table it will be seen that of the 924 cases noted, 516 labours were completed within 12 hours; 273 between 12 and 24 hours; 76 between 24 and 36 hours; 36 between 36 and 48 hours, and 23 were protracted beyond 48 hours. Of the 16,414 cases noted by Dr. Collins, in the Dublin Lying-in Hospital, the duration of labour was ascertained in 15,850 instances. The following table furnishes the per centage of the duration of labour in that Institution, with the results arrived at by the preceding table.

Comparison of Mendon with Dublin.

Places of observation.	Under 12 hrs.	12 to 24 hrs.	24 to 36 hrs.	36 to 48 hrs.	Over 48 hrs.
Dublin, Ireland,	95.1	3.1	0.8	0.5	0.3
Mendon, Mass.	55.8	29.5	8.3	3.9	2.5

Can the very great disparity in the results of the preceding comparison be accounted for by the difference between the hospital practice of the city and the private practice of the country? I am aware that the hard-worked, poorly clothed, and poorly fed patients, collected from the narrow lanes and filthy purlieus of a great city, cannot be expected to exhibit the same pathological conditions, or the same catenation of obstetrical phenomena, as the robust, well fed, and warmly clad inhabitants of the country. Especially must we allow there is reason for difference when the collocation brings the squalid and suffering Irish-woman into juxtaposition with the happy and healthy country-woman of our own commonwealth. But making all reasonable abatement on the score of differences that are plain and obvious, the discrepancy between the results arrived at, at the two places of observation, is still too great not to prompt the desire for a fuller and more satisfactory solution of the problem. The question still remains unanswered why 95 per cent. of cases of midwifery, in the hospital practice of Dublin, should be completed within 12 hours, while only 55 per cent. are completed in the same time in Massachusetts; or why 25 cases out of every 1000 are protracted beyond 48 hours in Mendon, and only three in Dublin.

The following table contains an analysis of all the cases, 23 in number, where the labour was of longer duration than 48 hours.

Number of case.	Age of patient.	No. of pregnancy.	Hours in labour.	Presentation.	Alive, dead, or putrid.	Sex.	Weight.	Observations.
1	23	2	69	Vertex.	A.	M.	8	
2	17	1	50	One foot.	A.	F.	10	O.
3	35	12	70	Both feet.	D. p.	M.	6	O.
4	21	1	60	Vertex.	A.	M.	9	
5	29	4	50	Breech.	A.	F.	8½	O.
6	23	1	90	Vertex.	D.	M.	10½	O.
7	36	2	50	Face.	A.	F.	9	O.
8	31	5	56	Vertex.	A.	M.	8	
9	17	1	65	do.	D.	M.	7½	
10	18	1	56	Face to pubis.	A.	M.	7	O.
11	17	1	60	Vertex.	A.	M.	8	
12	39	3	96	do.	A.	F.	8½	O.
13	20	2	72	do.	A.	M.	9	
14	17	1	67	do.	D.	M.	7	
15	21	1	85	do.	A.	M.	8	O.
16	38	7	72	Breech.	D.	M.	9	O.
17	27	2	56	Vertex.	A.	F.	8½	
18	23	3	56	do.	D.	M.	8	
19	16	1	66	do.	A.	F.	7	
20	19	2	56	do.	A.	M.	8	
21	17	1	60	Both feet.	D. p.	F.	7	O.
22	26	4	65	Vertex.	A.	M.	7	
23	21	1	60	do.	A.	F.	8	

Observations.—Case 2 was a first pregnancy, and the child, weighing ten pounds, was born alive, after a labour of fifty hours. The membranes were ruptured early in the labour, and the right foot soon came down. No attempt was made to bring down the other foot, and the protraction of the labour seemed to be principally owing to the difficult passage of the hips through the bony passage. The pains, for the most part, were not severe or striving.

Cases 3 and 21 were presentations of both feet, and both the children were dead and putrid. The pains in both cases were, for a great portion of the time, feeble and irregular. The membranes were ruptured early in the labour, and the peculiar fetor of decomposition was directly noticed; in one case, so pungent as to pervade the whole house.

Cases 5 and 16, the breech presentations, were large children, and the length of the labours, although the pains, for the most part, were strong and regular, seemed to be principally owing to the difficulty of their passage through the superior strait of the pelvis. There was no difficulty in the delivery of the head in either case. In number 16, the child had been dead many hours before the termination of the labour.

Case 6 was delivered by lessening the head and the use of the blunt hook. The mother had a rapid recovery—has since become pregnant and been delivered of a living child, after a short and easy labour, without assistance.

Cases 7 and 10, being the face and the face to the pubis presentations, were undoubtedly protracted by the peculiarity of the presentations.

Case 12 occurred in a patient who passed eighteen years, from the birth of her last child until the present, without once becoming pregnant. The unusually lengthy labour was principally, if not wholly, owing to the contraction of the pelvis. Both her former labours were long and tedious, and attended with much suffering.

Case 15 was a first pregnancy, and its protracted duration was attributed to the shortness of the sacro-pubic diameter. The child was born by the natural efforts, and both it and the mother did well. She has since removed to a distant part of the country, and has given birth to two sons and a daughter, after long and tedious labours.

The following table exhibits the per centage of the different presentations of the protracted labours.

Presentations of 23 cases of protracted labour.

Presentations,	Vertex.	One foot.	Both feet.	Breech.	Face.	Face to pubis.
Per centage,	69·6	4·3	8·7	8·7	4·3	4·3

7. *Flooding.*—Of the 927 cases of delivery, 838 were noted. In these flooding occurred in 27 cases only. Of these 27 cases, five occurred during labour and before the birth of the child; fifteen after the birth of the child and before the delivery of the placenta, and seven after the delivery of the

placenta. The flooding before the birth of the child ceased, or was greatly moderated, upon the rupture of the membranes. That after the birth of the child, and before the expulsion of the placenta, was speedily checked by the delivery of the placenta, or, soon afterwards, by the use of opium and acetate of lead, the liquor cupri sulphatis of the U.S. Pharmacopœia, ergot, &c. The flooding after the expulsion of the placenta was arrested by the same means. In no case was the hemorrhage so excessive as to become alarming. The patients all speedily recovered.

8. *Convulsions*.—Of the 927 cases, convulsions occurred only in *two* instances. An account of one of these cases was published in an article, "Statistics in Midwifery," in the October number of this Journal for 1843. Of the other no notes were furnished by my correspondent, in whose practice it occurred. This is the more to be regretted as such cases are of rare occurrence; and, as much doubt hangs over their pathology, every case should be subjected to a rigid scrutiny.

9. *Puerperal fever*.—Under this head are included puerperal peritonitis, metritis and crural phlebitis. In the 927 cases, puerperal fever made its appearance in 12 patients. *Two* of these cases were reported in the paper before referred to, and the remaining *ten* were furnished by my correspondents. Nine of the ten occurred in the practice of Dr. C. C. Field; and I am indebted to his kindness for the liberty of presenting the following transcript of his notes.

CASE I.—Mrs. S——, aged 21, general health good, was confined on Saturday morning, Aug. 25, 1844, with her first child, a girl, after a natural and not difficult labour, which had continued through the preceding night. Sunday evening, Aug. 26, she was seized with chills, headache, pain in the back and limbs, and severe pain with tenderness in the bowels. This state was soon followed by high fever, thirst, quick pulse, &c. She had prescribed for her, and took calomel and antimonial powder that night, to be followed by salts and senna next morning.

Monday, Aug. 27th.—Medicine operated freely and with some relief to the pain in the head, back, limbs and bowels. Skin hot but moist, pulse quick, thirst urgent, bowels still tender. In the evening took 2 grs. of calomel and 1 gr. of ipecacuanha in pill, to be repeated in six hours, and Seidlitz powders next morning.

Tuesday, 28th.—I was this day called to take charge of the patient, as her attending physician was obliged to leave town for a week. When I arrived the pills and Seidlitz powders had operated three or four times. Pain in the head and limbs had ceased; pulse 120 beats in a minute; tongue covered with a brownish-white coat; tenderness and swelling of the abdomen; a "fever turn," with flushed cheeks in the afternoon; lochial discharge very scanty, and no secretion of milk. Skin was moist; thirst urgent; not much restlessness; patient *not* despondent. On account of the tenderness of the bowels she had not been out of bed for two days. I prescribed 2 grs. of calomel and 4 grs. of antimonial powder to be taken in the afternoon, and another dose in the evening of the same quantity; also 2 grs. of calomel and 1 gr. of ipecacuanha, in pill, at midnight, to be followed by

a wineglassful of a solution of Epsom salts with magnesia in the morning, once in three hours, until free catharsis was produced. The solution of Epsom salts is made by dissolving 2 oz. of the salts in a pint of water, adding a tablespoonful of magnesia.

Wednesday, 29th.—Patient had slept some in the night; skin moist; pulse 112; thirst less; tenderness of the bowels much abated; lochia scanty and no secretion of milk. She had taken three doses of the solution of salts which had procured six or eight dejections. Prescribed Dover's powder at bed-time and 2 grs. of calomel and 4 grs. of James' powder once in four hours for the next day. Solution of gum arabic, rice or crust water, &c., for drinks.

Thursday, 30th.—Patient had passed a quiet night; pulse 100; but little tenderness of the bowels; she could turn upon her side in bed without much suffering; sat up long enough to have her bed made in the morning. Had taken the calomel and antimonial powder through the day, and is to continue same through the night.

Friday, 31st.—Pulse 96, and other symptoms improving. As there had been no motion of the bowels since the 29th, she took a dose of the solution of the salts, which produced two or three dejections. Is to take a Dover's powder at bed-time.

Saturday, Sept. 1st.—Patient says she feels more comfortable; pulse 90; skin moist with some heat; tongue moist with a thick, dark coat; took calomel and James' powder in the forenoon and afternoon, a pill of calomel and ipecacuanha at bed-time, to be followed by castor oil in the morning.

Sunday, 2d.—Medicine had operated well; pulse 84; all other symptoms better; patient complains of tenderness of the gums, and there is some mercurial fetor in the breath. Omit all medicine. Arrowroot and gruel for nourishment.

Monday, 3d.—Patient sat up half an hour this morning; pulse 72; feels "faint at the stomach;" has some salivation. Prescribed a wineglassful of infusion of chamomile and valerian, three times a day; her bowels to be moved, every second day, by an infusion of senna, figs, and ginger. Arrowroot, &c., for nourishment. The infusion of senna is made by infusing 1 oz. of senna, 4 oz. figs, and a teaspoonful of ginger in a pint of boiling water. Dose, half a tumblerful, to be repeated if necessary.

After four or five days the sore mouth ceased, the tongue became clean; the appetite returned; secretion of the milk took place and a perfect convalescence ensued. Her health has continued good and the child is robust.

I may here remark that in this case, as in all the others, occurring within the first week after confinement, the subjects of the fever, during the latter months of pregnancy, had an unusually good appetite, which had been freely indulged, and they had become quite plump in flesh—I might almost say fat.

CASE II.—Miss C—— W——, unmarried, healthy, was confined on the morning of the 18th of September, 1844, after a natural labour with her first child, a girl. She was in labour most of the night, but it was not difficult or tedious. She was quite comfortable during the first week. Her nurse then left her, and she was obliged to leave her bed and room and take care of herself and family, consisting of her father and brother and sister. She kept about for nearly a week, when, after washing and hang-

ing out the clothes, she was attacked with chills, pain in the bowels and headache.

1st day. Saw her to day for the first time. She informed me she had felt some pain and tenderness of the bowels ever since she had left her room. Had taken castor oil twice but without relief. I found her pulse quick, tongue coated with a white fur; bowels tender and painful; but slight secretion of milk; lochia had ceased for some days. I left her two pills of calomel and ipecacuanha, each containing two grs. of calomel and one gr. of ipecacuanha, one to be taken then and the other in six hours, to be followed by salts and senna in the morning, in divided doses. Warm fomentations of hops and spirits to the abdomen.

2d day. Did not see her this day until evening. Found the stomach had rejected the pills and infusion of senna and salts. Pulse one hundred and thirty; abdomen very much swelled and excessively tender; shoulders raised by pillows, and feet drawn up to relieve the tension of the abdominal muscles; cheeks flushed; skin hot and dry; thirst urgent; frequent vomiting of green matter and constant hiccough. Prescribed powders, each containing two grs. of calomel and one-sixth of a gr. of morphine, to be taken once in four hours, and a blister to be applied over the whole bowels. Her mouth to be frequently moistened with a solution of gum arabic. She had no nurse but was dependent for what care she had taken of her, upon the neighbours. Her father was so poor as to afford nothing but the commonest necessities of life when the family were well, and, of course, none of the conveniences of sickness.

3d day. Blister had filled well throughout its whole extent; vomiting had ceased as also the hiccough; pulse one hundred and thirty; bowels less painful and tender, but could not bear to be moved in bed; skin moist but hot; thirst still urgent, &c. Prescribed two grs. of calomel without the morphine, once in four hours, and gum arabic, in solution, for drink. Saw her again in the evening. Had flushed cheeks and a high "fever fit." Other symptoms same as in the morning. The stomach remaining quiet and no operation from the bowels yet, I prescribed three grs. of calomel, once in six hours, and a wineglassful of the solution of salts with magnesia, once between each powder, and to be continued, if the stomach tolerated the medicine, till free purging was produced.

4th day. Patient had slept some. The medicine had been retained and operated freely, some eight or ten times, with marked relief to all the alarming symptoms. Pulse one hundred and eight; fever less; less tenderness of the bowels, though she thought she could not be got up in a chair on account of the remaining soreness. Prescribed calomel and James' powders once in six hours through the day and night, and a wineglassful of the solution of salts with magnesia the next morning, and to be repeated if need be.

5th day. Patient had slept some with moisture of the skin; pulse one hundred; fever less; skin hot but moist; thirst less; pain and tenderness in the bowels much relieved, could be turned on her side and lie awhile; medicine had operated kindly, three or four times during the day. Take Dover's powder at bed-time.

6th day. Pulse ninety and all other symptoms better. Sat up in a chair long enough to have her bed made and clothes changed. Have a Dover's powder at night.

7th day. Patient better, gums a little tender. Omit all medicine and be allowed to take liquid nourishment.

8th day. Pulse seventy two; fever gone. Had a slight salivation for four or five days. During the second week the treatment was similar to that of the first case, and, like that, terminated in perfect recovery. The milk returned as convalescence progressed, and her health has been good up to this day.

CASE III.—Mrs. B—— was confined with her third child Oct. 15th 1844. The child was a male. With this, as with her other children, she had an easy labour and was so comfortable, during the first week, that she left her room and went about the house the beginning of the second. Towards the close of the second week, after “lumping up some butter” and eating freely of a boiled dish for dinner and some of the same, *cold*, for supper, she was seized with symptoms of peritonitis. During the night the stomach relieved itself of its load, and she took a dose of castor oil the next morning, which operated well, but without affording any relief. When I first saw her, the latter part of the day following the supper of “cold victuals,” she was labouring under symptoms similar to those of case 2d, except that there was no vomiting. She took a pill of two grs. of calomel and one gr. of ipecacuanha to be followed by the solution of salts with magnesia, until free catharsis should follow. As the stomach tolerated the medicine a favourable impression was made on the disease at the outset. The 2d day she took the pills, and the 3d, salts again. The inflammation abated rapidly and was gone on the sixth day from its incursion. The appetite soon returned, the milk was restored and perfect convalescence ensued by the 9th day of the disease. No mercurial effect on the system was noticed.

CASE IV.—Mrs. D——, aged 29, healthy, was delivered Dec. 17, 1844, of her first child, a girl, after a natural labour, which continued through the night. The child was born at 7 o'clock A. M. About ten or fifteen minutes afterwards I caused slight traction on the cord to be made (as is my custom), but the placenta did not come away. I found there was considerable hemorrhage. In about fifteen minutes more I tried traction on the cord again, but without success. The feeling imparted to my hand, by the cord, was as if the placenta was held firm. The patient becoming faint the pillows were taken from beneath her head and I used traction again, with pressure over the lower part of the abdomen, but without effect. Faintness continuing, I administered ergot and laudanum. Pain soon came on at regular intervals, and continued for half an hour. During the time I tried traction again, but with no better success. When the specific effect of the ergot ceased, the patient slept awhile with less flowing, but she could not have her head raised without fainting. Gave ergot again; the pains came on and continued about the same length of time as before, but the placenta did not appear. It was now 10 o'clock A. M., and, hemorrhage continuing, I decided to introduce my hand into the cavity of the uterus. I did so, and found an hour-glass contraction of that organ, and the whole mass of the placenta above it. With my fingers I dilated the contraction, as gently as I could, siezed the placenta, which was loose, and removed it. The hemorrhage ceased at once. In the evening I visited her, and found that reaction had come on so as to threaten danger. In order not to mistake reaction after hemorrhage for inflammation, I gave her 8 grs. of Dover's powder, and ordered warm spirits to be kept upon the abdomen.

Dec. 18th. Patient had slept some with moisture of the skin; pulse 120; thirst; furred tongue; bowels very tender, with some pain; skin now hot,

with headache. These symptoms of inflammation existing, I gave her the solution of salts until free purging was produced, to be followed, at bed-time, by a Dover's powder.

19th. Symptoms of inflammation abating, particularly the soreness of the abdomen. Prescribed calomel and the antimonial powders through the day, and Dover's powder at night.

She took the solution of the salts again on the 20th, and also on the 22d, with calomel the intervening day. After the fifth day, the disease rapidly subsided, and was gone on the 8th from its incursion. Convalescence ensued in the course of the second week with the secretion of the milk and perfect restoration to health. The treatment in the second week was like that of the other cases already described. There was a slight mercurial effect in this case. *Quere.* Would the symptoms of inflammation have subsided, in this case, without the active treatment? At any rate she got well under free purging with salts and calomel.

CASE V.—Mrs. G——, of Lunenburg, aged 23, was confined with her fifth child, a girl, on the evening of Dec. 18, 1844, after an easy and rapid labour. The child was born and the placenta had come away, with some flowing, before I arrived. She was very comfortable through the first week, as she had been with all her other children; was up and dressed and about her room after the third day, in spite of my repeated caution.

Dec. 25th. Seven days after her accouchement, I was called again in the night. Said she had been "quite smart" until that day; went out into the kitchen and took her meals with the family the day before, and also this morning. Before noon was taken with a severe headache, pain in the bowels, &c. She took, in the afternoon, a dose of castor oil, which had operated, but without bringing any relief. Her pulse was now 120 beats in a minute, strong and full; tongue coated with a white fur; severe pain and great tenderness of the abdomen; headache, and great pain in the back; cheeks flushed; skin hot; but little milk. Ordered fomentations of hops and spirits to the bowels, to be followed, in six hours, by one oz. of Epsom salts with magnesia, and ss. oz. of Epsom salts to be given every four hours until *ten* or *twelve* discharges from the bowels had been procured.

26th. The medicine had purged her thoroughly and with great relief. I need not describe the case further. The inflammation was subdued in six days, by similar treatment to that pursued in the other cases. Convalescence and restoration to health ensued in the course of the second week. The gums were very slightly affected by the calomel.

Of case 6th, (Feb. 26, 1845,) case 7th, (May 6, 1845,) case 8th, (June 10, 1845,) there is no need of a particular description, as they were so similar to the first case, though less severe. The treatment was the same as in that case, except that, as the inflammation yielded earlier, the calomel was omitted sooner, and none of its peculiar effects upon the glands were manifested. The results were the same as in the other cases.

CASE IX.—Mrs. F——, aged 25, health good, was delivered of her second child, a boy weighing 10 pounds, on the morning of June 16, 1845, after an easy and rapid labour of three hours' continuance. She was supposed to have gone two weeks, at least, over nine months from conception. During the last four or five weeks of pregnancy, she was obliged to keep her bed, some of the time, each day, on account of great tenseness and ten-

derness of varicose veins, which had extended over the whole surface of the abdomen, the right groin, and down the right leg. There was some swelling of the ankles, particularly at night. She was very comfortable, after her confinement, until the seventh day. The secretion of the milk appeared on the day of her accouchement, and its flow was very abundant for the next six days. During this time her pulse never exceeded 72 beats in a minute. Her bowels had been moved twice, once with castor oil, and once with Seidlitz powders; her nourishment had been water gruel for the first four days, to which, on the 5th and 6th, a little bread was added. The tenseness and tenderness of the varicose veins had almost entirely ceased, and I was congratulating myself on an escape from an attack of phlebitis, which I had for some time feared, when suddenly, on the eve of the seventh day from her confinement,

June 22d, having felt perfectly comfortable up to that moment, and was, in fact, upon the point of sitting up in bed to take a cup of tea, she was seized with severe rigors ("terrible chills," she calls them to this day), so that her teeth chattered and the bed shook under her. I examined her pulse during the rigors and found just 72 beats in a minute, the same as in the forenoon and afternoon of that, and every previous day since her confinement. She is of a calm, quiet temperament, not at all inclined to be nervous, and has had no apprehensions in regard to the result of her accouchement. The rigors lasted about 15 minutes. This state was followed by great heat, headache, pain in the limbs, quick pulse (120 in a minute) and restlessness. She had no pain in the bowels, nor was there any during the disease afterwards; no tenderness, except in a slight degree just above the pubis and in the right groin. No swelling of the abdomen at any time. In the evening she took 2 grs. of calomel and 1 gr. of ipecacuanha in a pill, and another one at midnight.

23d, (8th from confinement.)—Passed a miserable night; pills had operated once; pulse 120, soft; tongue covered with a white coat; thirst urgent; lochia suppressed; milk almost entirely gone; pain in the head and back continues; no tenderness save above the pubis and in the groin, and that but slight. Took a full dose of salts and senna, which operated freely in the forenoon; and, during the afternoon and night, had calomel and the antimonial powders, once every four hours. In the afternoon after she commenced taking the powders, she sweat freely on the upper part of the body, arms, neck and face; but there was no moisture of the skin on the lower part of the body and lower extremities. This state continued during the whole course of the disease.

24th, 9th day.—Took a Seidlitz powder this morning, which, with the calomel taken in the afternoon and night previous, operated six or seven times during the day; pulse 120; not much restlessness; headache gone; secretion of the kidneys scanty and high-coloured; no milk; lochia entirely suppressed; some sleep by short naps in the night; skin moist as mentioned in last record. She took no anodyne, as there was not much restlessness and had some sleep. Prescribed 2 grs. of calomel and 4 grs. of James' powder once in six hours only, as there was a tendency to run off by the bowels.

25th, 10th day.—Symptoms much as yesterday. Continue calomel and James' powder through day and night.

26th, 11th day.—In the morning took one wineglassful of the solution of salts with magnesia, which operated four or five times through the day. From this time the pulse began to moderate in frequency.

27th, 12th day.—Pulse 108 and at night 100; rather less heat of the skin, and other symptoms the same. Took the antimonial powder without the calomel.

28th, 13th day.—Pulse 96; heat of the skin abating; thirst less; urine yet scanty; other symptoms the same. Took a wineglassful of the solution of salts with magnesia again, which operated three or four times during the day. In the night she sweat profusely on the upper part of the body, and a little, for the first time, on the lower part. Towards morning the pulse *suddenly* fell to 72, with some disturbance of the nervous system. The lochia also *suddenly* returned, and after two or three hours of quiet sleep she awoke late in the morning.

29th, 14th day.—Free from fever. At once the tendency of the groin increased and the right limb rapidly began to swell. The limb swelled a good deal, but was not very tender except on motion. There was no fever after this time.

30th, 15th day.—Patient began to take an infusion of chamomile and arrowroot for nourishment. The bowels were kept soluble by the infusion of senna, figs and ginger, every second day. The limb was bathed with volatile liniment and spirits. The secretion of milk began to return, and, during the second week became abundant. At the end of the second week, from the incursion of the disease, she could sit up most of the day. Began soon after to walk about with crutches and continued their use for two weeks, having the limb bandaged. As she began to get about, the swelling of the limb diminished, although it did not entirely subside until the end of four or five months. She did not suffer from mercurial sore mouth. Her health was perfectly restored and remains good to this time.

In concluding the foregoing relation, Dr. Field says: "You will perceive that I rely very much on early and thorough purging with calomel and salts. That it will have a decided good effect to control and subdue inflammation, I think there can be no question. The medicine operates without pain, and, under its use, the pain and tenderness of the bowels rapidly subside. If the inflammation does not decidedly yield within two or three days, I keep up the administration of the calomel in order that I may have its peculiar effect to resolve any remaining disease. If I was to volunteer a theory of the beneficial action of such treatment, I would say that, by the abundant serous discharges, it procures depletion from the organs affected, or from their near vicinity; prevents the effusion of coagulable lymph and thereby promotes resolution. If the inflammation continues beyond the fourth day, I think it safer for the patient that calomel should be pushed to the extent of affecting the gums, for then I feel assured that the dregs of the disease will be removed, and there will be less danger of a relapse. Neither have I found free purging, in this way, produce prostration of strength even in feeble persons. Of course this should be done in the outset of the disease. How it might do, if the disease had been allowed to run on for three or four days, unchecked, I cannot say. It might bring on a troublesome diarrhœa and prostration. As yet I have had no case in which the inflammation did not subside, if I could procure free catharsis, with salts, soon after the attack."

Note.—Some time since I prepared the following “Abstract of Cases of Midwifery,” and distributed copies among many of the physicians of my acquaintance, with the hope that I should be able to collect an account of all the cases occurring in their practice. As yet I have received but few returns. Nevertheless, I do not yet despair of enlisting their hearty co-operation, and of being able, at some future day, to present a full account of all the cases of midwifery, yearly occurring, in the County of Worcester.

Abstract of cases of Midwifery kept by				of	
Mother.		Child.	Placenta.	Previous children.	
Age when married.				Whole No. previous children.	
Age when delivered.				Whole No. males.	
Number of pregnancies.				Whole No. females.	
Number of hours in labour.				Whole No. males now living.	
Flooding after 6 months, and before labour.				Whole No. females now living.	
Flooding between the birth of child and delivery of placenta.				No. twins or triplets.	
Flooding after delivery of the placenta.				Force delivered.	
Convulsions.				Minutes between birth of child and delivery of the placenta.	
Puerperal fever.				Placenta upon edge or mouth of uterus.	
Presentation.				No. of placenta in twin cases.	
Sex.				Force reported.	
Weight.					
Length.					
Insertion of the funis.					
Diseased.					
Deformed.					
Illegitimate.					
Dead or alive, or dead and putrid.					
Died during the 1st month.					
Delivered at what month of pregnancy.					
Year, month, and day of birth.					
Hour of birth.					
Interval between twins.					
Force delivered.					

NUMBER OF CASES.

10. *Presentations.*—Of the 932 children, subject of the present analysis, the presentation was determined in 912 instances. In the remaining number the child was either born before the arrival of the accoucheur, or, if the presentation was determined, was not made a matter of notation in the “abstract.” The different presentations are collected in the following table, and which is to be read thus: 874 were presentations of the vertex, and so on.

Presentations of 912 cases.

Presentation.	Vertex.	Breech.	Feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.	Unknown.
Number of each,	874	13	9	1	1	2	8	1	3	20

In order to make the comparison with greater facility, the following table has been constructed, showing the ratio of the different presentations in 100 cases. The table is to be read thus: 95·8 per cent. were presentations of the vertex, and so on.

Ratio of presentations in 100 cases.

Presentation.	Vertex.	Breech.	Feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.
Ratio,	95·8	1·4	·9	·1	·1	·2	·8	·1	·3

The following table is constructed to exhibit the ratios of the presentations in 1000 cases; the *first* line, the presentations in cases which were completed *within* 48 hours; the *second*, the presentations in cases protracted *beyond* 48 hours. The table is to be read thus: in every 1000 cases completed within 48 hours, the vertex presented 964 times, and so on; in every 1000 cases protracted beyond 48 hours, the vertex presented 696 times, and so on.

Ratio of presentations in 1000 cases, under and over 48 hours.

Presentation.	Vertex.	Breech.	One foot.	Both feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.
Under 48 hours,	964	12		7	1	1	1	7	1	3
Over 48 hours,	696	87	43	87			43	43		

From this table we see that there is a much larger proportion of presentations, other than the vertex, in those cases which are protracted *beyond*, than in those which are completed *within* forty-eight hours from the commencement of labour. Will not this fact aid in the solution of the problem whether the protracted labour is not, in some measure, to be accounted for

by the unusual presentation of the child? That the ratio of the presentations of the breech, one foot, both feet, face, and face to the pubis, in those labours protracted beyond forty-eight hours, should be so greatly increased beyond that which obtains in cases which are completed within that period, cannot, I think, be regarded as accidental or fortuitous.

Of the *breech* presentations, three were included in the statistical article before referred to, leaving eleven for the cases occurring since its publication. The following table exhibits a condensed analysis of them.

Analysis of 11 breech presentations.

No. of case.	Age when married.	Present age.	Number of pregnancy.	Length of labour.	Sex.	Weight.	Alive or dead.	Full time or not.
1	20	27	4	10 hrs.	F.	4½ lbs.	A.	9 mos.
2	26	29	1	12	M.	6	A.	9
3	18	40	11	6	F.	9½	A.	9
4	23	35	4	12	F.	8	A.	9
5	21	26	3	17	F.	7	D.	9
6	17	30	5	15	M.	8½	A.	9
7	23	29	2	50	F.	7	A.	9
8	20	21	1	24	F.	6½	D.	9
9	30	33	1	12	M.	7½	A.	9
10	21	24	1	6	F.	4	D.	7
11	19	26	3	30	F.	8	A.	9

Of the foregoing cases, No. 1 was a case of twins. The first child was born with the vertex presenting, weighed five pounds and a half, and died during the first month. The interval between the birth of the two children was fifteen minutes. Nos. 5, 8, and 10, where the children were still-born, were attended by no unusual circumstance, except that No. 10 was a miscarriage. The children had been some time dead, as evidenced by the fact that, in many places, the cuticle could be easily detached.

The *knees* presentation occurred in the first pregnancy of a woman, aged 22, after a labour of eighteen hours. It was an abortion in the sixth month of pregnancy, the child, a boy, weighing two pounds and three-quarters, and still-born.

Of the nine presentations with *both feet*, three were disposed of in the article before-mentioned, leaving six to be analyzed in the present communication, as may be seen by the following table.

Analysis of 6 cases of presentation with both feet.

No of cases.	Age when married	Present age.	Number of pregnancy.	Hours in labour.	Sex.	Weight.	Alive, dead, or dead putrid.	Full time or not.
1	14	35	12	70	M.	6	D. p.	9
2	19	24	2	7	M.	7	A.	9
3	21	22	1	17	F.	3	D.	9
4	36	37	1	5	M.	1	D.	5
5	22	27	2	36	F.	7	A.	9
6	28	33	3	10	M.	7	A.	9

In the foregoing table, No. 3 was set down in the "abstract" as "dis-eased" and "deformed," being acephalous. It occurred in the practice of one of my correspondents, and I am unable to give any further account of the fœtus. No. 5, as will be seen, was born at the fifth month, and weighed but one pound. By a reference to the "abstract," I find there was flooding in the early stage of pregnancy; and, probably, the small weight of the fœtus, as well as the premature labour, is attributable to this fact.

The *foot and knee* presentation was included in the article heretofore mentioned.

The two *face* presentations occurred, the one before my former report, and the other was furnished by a correspondent without note or comment.

The eight *face to the pubis* presentations are returned without remark, except in three cases. One, a female, born after a lingering labour of forty hours, weighing nine pounds and a quarter; another was the last born of a pair of twins, a male, weighing seven pounds and three quarters; and the third was a female, weighing eight pounds. The last two were ninth pregnancies. Mothers and children all did well.

The *placental* presentation occurred in a case of abortion, and has been already reported.

Of the three cases of presentation of the *funis*, two have been disposed of in a former article; of the other, I find no remark except that the vertex next came down, and that the child was dead at birth.

The presentation with *one foot* was suffered to go on without endeavouring to bring down the other foot. The labour progressed rapidly and terminated favourably both for the mother and child. Need much importance be attached to the advice, to search for and bring down the other foot?

11. *Sex*.—Of the 932 children born, their sex was noted in 918 instances; and the proportion to each other was as follows, viz:—

<i>Sex of 918 children.</i>	
Males, 477.	Females, 441.
Males, 52 per cent.	Females, 48 per cent.

12. *Weight of children*.—Of the 932 children, their weight was ascertained in 836 instances. The following table is to be read thus: one child weighed one pound, and was a male; four weighed two pounds each, two of whom were males and two were females, and so on.

<i>Weight and sex of 836 children.</i>												
Weight in lbs.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	1	4	4	3	3	29	141	260	244	108	38	1
No. of males,	1	2	3	1	2	10	55	112	132	70	30	1
No. of females,		2	1	2	1	19	86	148	112	38	8	

The whole number of children, 836, whose weight was ascertained, weighed 6960 pounds, averaging eight pounds five ounces and a fraction, each. The whole number of males, 429, whose weight was ascertained,

weighed 3695 pounds, averaging eight pounds and ten ounces, each; while the whole number of females, whose weight was ascertained, being 407 in number, weighed 3265 pounds, averaging eight pounds, each.

13. *Length of the children.*—Of the 932 children, 242 were measured at birth, and their average length was found to be nineteen inches and a quarter, with but a fractional difference between the males and the females, the males being the longest.

14. *Insertion of the funis.*—Of the 932 children, the insertion of the funis was noted in 242 instances. The funis was inserted in the centre of the body of the child 209 times out of the 242, who were examined for that purpose. The insertion of the funis in the centre of the body is accounted one of the evidences of the delivery of the child at the full time; and, consequently, may be used in the settlement of any medico-legal question admitting its applicability. Alone, it cannot be a test of much value; but may be used as corroborative of other and stronger evidence.

15. *Diseased.*—Of the 932 children six were born diseased, viz.: two had spina bifida, one was acephalous, and three were marked “diseased,” but no particulars noted.

The acephalous case occurred in the practice of Dr. Southwick, already mentioned as my friend and correspondent, and is returned without remark; as are also the three others marked “diseased.” One case of spina bifida was related in the article heretofore published in this journal. The other, happening in my own practice, is as follows, viz.:—

Mrs. A——— was delivered of her first child June 21st, 1839, after a labour of thirty hours. On examining the child, which was a male, a tumour was discovered over the second dorsal vertebræ, about the size of a quarter of a dollar. The tumour was flat, and raised about one quarter of an inch above the surrounding skin. The covering of the tumour seemed to consist entirely of cuticle, and the tumour itself was filled with a transparent fluid, seen to be so through the extremely attenuated covering. Around the base of the tumour was a vigorous growth of hair.

From this time until its decease, Feb. 24, 1840, the child continued to grow, and was as little troublesome as children in general. For the first few days after its birth, a thin transparent fluid was discharged from the tumour, apparently by the process of transudation. The growth of the tumour increased with the growth of the child, and, at its death, was as large as a small orange—that is, about two inches in diameter, and of an oval shape. The lower limbs, it was thought, did not grow in proportion to the rest of the body. They were, at times, partially paralytic, the right limb more so than the left one.

For some weeks before its death, it had occasional paroxysms of laborious respiration, making quite a loud and distressing noise during inspiration. It did not seem to be in pain, at these periods, but after a while, would become quite exhausted by the exertion. I attributed these paroxysms to a loss of power in some of the muscles of respiration, owing to a diminished supply of nervous influence. There was something unnatural about the eyes; the outer angle was considerably raised above the inner one, and the eyeballs exhibited an uncommon degree of mobility. The countenance, in

its tout ensemble, strongly reminded one of those Chinese portraits we often see on fans and other articles of oriental manufacture. It was a common remark of visitors that the countenance betrayed the evidence of idiocy. Of this, however, I did not feel so certain.

The tumour again began to discharge some seven or eight days before death; portions of it became affected with superficial ulceration, and were soon covered with a crop of fungous granulations. The discharge, as at first, seemed to be only the simple exudation of a thin transparent fluid, no opening could be discovered upon the closest inspection. The discharge was small in quantity, so that a change of the compress, once or twice a day was amply sufficient for its absorption. After a day or two of more than common uneasiness, though without any thing particularly noticeable by the parents, on the morning of the 24th of February, the patient was attacked with a severe paroxysm of the laborious respiration. This was repeated with short intermissions frequently through the day; the patient becoming more and more exhausted, the paralytic affection of the lower limbs more profound, and followed before death by a palsy of the left arm. The little patient became comatose at sunset, and died at 10 o'clock of the same evening.

Autopsy, forty hours after death.—Whole surface œdematous, readily pitting upon pressure; tumour flaccid, containing but little fluid; surrounded by an unnatural growth of hair; on dissecting out the tumour, found it to be cellular, two large cells on each side of the median line and several smaller ones, each communicating with the other. The spinous process, as well as the whole posterior portion of the body of the second dorsal vertebræ, was wanting. There was a notch also in the adjoining superior and inferior vertebra, making the opening into the spinal canal one inch and a quarter long by three-quarters of an inch wide at its widest part. A small quantity of serous fluid escaped upon cutting into the sac during the dissection. Pressure upon the head would drive out the fluid at the opening in the spine.

The head was next examined. Upon removing the scalp, the bones of the cranium were found in many places to be deficient in ossification, though covered by the pericranium; some of the spots where no ossification had taken place, were as large as a half dime. Upon inquiry, it was learned that the parents, during the life of the child, had noticed pulsations at these points synchronous with the beating at the fontanelles. The fontanelles were found unusually large. Upon attempting to remove the cranium it was found to be strongly adherent to the dura mater, much more so than in any case I had before witnessed. After considerable dissection with the handle as well as the edge of the knife, the skull was removed, though not without evacuating one of the ventricles by an unlucky slip of the knife. The vessels, either of the dura or pia mater, were not unusually turgid, neither was any spot discovered where the capillary vessels were injected. The brain was now carefully sliced away until the lateral ventricles were exposed. These were found partially evacuated of their contents, one being opened by the removal of the cranium. They were estimated to have contained, when full, six ounces of fluid. The opening between them was three-quarters of an inch in diameter, its shape being a little oval. All the ventricles of the brain were found to be much enlarged and filled with an opaline-coloured serous fluid. Immediately over the central point of the cerebellum, and in contact with it, was an encysted tumour three-quarters of an inch in diameter, filled with a perfectly transparent

fluid. This tumour seemed to have no connection except with the cerebrum, from which it was readily detached by the handle of the knife, and removed without rupture of the cyst. The cerebellum was very much raised at its central point, displaying quite a cone-like appearance. Upon removing the cerebellum a probe could be readily passed from the cranium to the opening in the spine, at the seat of the external tumour.

During the whole dissection very little traces either of recent or of former inflammation were discovered.

16. *Deformed.*—Of the 932 children, the subject of the present communication, six were noted as deformed. Two of these cases were contained in my former article, and two were returned by my correspondents without remark. Of the remaining two, one was a case of talipes varus of both feet. The child lived but a few weeks. Of the other, the following account is extracted from a paper published in the Boston Medical and Surgical Journal, for July 10, 1839:

Mrs. ———, after a day or two of more than usual hard work, was attacked with severe abdominal pains, soon followed by a slight uterine hemorrhage. These symptoms continued through the succeeding night without abatement, the pains being so constant as to allow but little, if any sleep. At half past 9 A.M., on the following morning, I was called to visit her. On my arrival I found her walking about the chamber, and apparently in strong labour pains. She supposed herself between six and seven months advanced in pregnancy. She has never suffered abortion, usually enjoys good health, and is the mother of two fine children. I advised her to go immediately to bed, hoping, peradventure, the premature delivery might be avoided. Complying with my advice, examination was then made, and the head, with the vertex presenting, was found resting upon the external organs. The hemorrhage was slight and the membranes were not ruptured. All hope of escaping the threatened miscarriage was now abandoned, and the customary preparations were directed to be made for the approaching delivery. The pains continued to grow stronger and more frequently recurrent, until 10 o'clock A.M., when the membranes were ruptured, and an *extraordinary* flow of water followed. A few more uterine efforts accomplished the delivery.

The child was still-born, exhibiting no signs of life, except a few, feeble, convulsive motions of the extremities, which soon ceased. On examination of the child it was found to be deformed as follows: The hand, if such it could be called, consisted only of a thumb and forefinger; the other fingers with their corresponding me-



tacarpel and carpel bones being absent. The thumb and finger well formed, and the nails perfectly developed. On examination of the forearm, the ulna was also found to be wanting; so that the forearm and hand, in their osseous organization, consisted only of the radius, the ossa scaphoides, trapezium, and trapezoides, the metacarpal bones of the thumb and index, together with their respective phalanges. The forearms were bent upwards towards the humerus and could not be straightened; being apparently held in that position, by a rigid contraction of the skin and muscles, at the flexure of the elbow joint.

The organs of generation presented the following mal-formation. A little fullness of the skin upon and below the pubis constituted what may be termed the rudiment of a scrotum. The usual site of the penis was occupied by a membranous tubercle, about the size and shape of a large pea, attached by a base of about two thirds of its own diameter. At first, no orifice was discovered in the tubercle; but, on turning it up, upon its inferior surface and partly in its base, a small orifice was found which proved to be the opening of the urethra; as a probe, properly bent, passed readily through it into the bladder.

Referring the reader to an inspection of the accompanying sketch of the fœtus made at the time, further description will not be necessary.

The mother, on being informed that the child was deformed, immediately answered, "I expected it would it be; it has a *hare-lip*, I suppose." On being asked why she supposed it would be thus deformed, she said, an acquaintance of the family who had a hare-lip, had been at the house several times during her pregnancy, and that she invariably felt *very disagreeable* when he was present. Mothers frequently trouble themselves about some anticipated deformity in their children, but I never knew their predictions verified, except in a single instance; a short account of which was contained in the statistical article before referred to, and published in this journal.

17. *Dead or alive, or dead and putrid.*—Of the 932 children born, 824 were alive, 20 were dead, 6 dead and putrid, and in 82, the fact was not noted. Of the 26 still-born, 22 were born in wedlock and 4 were illegitimate. Of this number, 17 were abortions and 9 were miscarriages.

18. *Died during the 1st month.*—Of the 824 children noted as being alive at birth (if the returns are correct) eight only died during the *first* month, which gives a proportion of 1 in 103. In the Dublin Lying-in Hospital, from November 1826 to November 1833, 16,654 children were born; and, during the time the mothers remained in the hospital (which, in most instances, was from eight to ten days after delivery) 284 died, which gives a proportion of 1 in 58. The difference in the mortality, which will be seen is very great, may be accounted for by the difference between hospital and private practice, and the social and physical condition of the two classes of patients. If, after removal from the hospital and before the close of the 1st month, all the deaths (for, undoubtedly, many occurred in that period) could have been ascertained, the difference would have been greatly increased.

19. *Delivery at what month of pregnancy.*—Of the 932 children born, the period of pregnancy was set down in 844 instances, as may be seen in

the following table, and which is to be read as follows, thus: one was born in the 2d month, and so on.

<i>Month of pregnancy of 844 deliveries.</i>									
Month,	2	3	4	5	7	8	9	9½	10
No. of deliveries,	1	9	4	3	9	13	794	9	2

Adopting the rule that births *before the sixth month* should be termed *abortions*, and those occurring *after that period and before the full time*, miscarriages, the table gives seventeen as the number of abortions, and twenty-two as the number of miscarriages. *Quere.* Should not the eleven births procrastinated *beyond* the full time be called miscarriages as well as the twenty-two which occurred within the two months *previous* to the full time? These cases were all returned by my correspondents without note or comment, so that I have no knowledge of the evidence upon which the opinion was based that they were thus procrastinated. Of the abortions returned by them neither have I any account. Of those occurring in my own practice two only will be commented on, as, in the others, nothing worthy of remark was noticed.

The following account of them is the substance of two communications read before the Union Medical Association.*

CASE I.—At 4 P. M. I was called to see Mrs. P. W., aged 23, married, and the mother of two children. From the patient and her mother I received the following history of the case: Day before yesterday, to wit, on Friday, the patient, while sitting by the fire, was suddenly seized with profuse flooding, and abortion soon followed. She was, as she averred, near the end of the third month of gestation. She went upon the bed at this time and has not been up since. She had but little rest the succeeding night, and yesterday was more unwell; a severe headache, very intense through the temples, coming on early in the morning, succeeded by a flushed face and hot and dry skin. The tongue was furred, she had no appetite and was very thirsty. This day, before my arrival, she had taken a cathartic of magnes. sulph., which had operated well, procuring five or six dejections.

Sunday, Feb. 3d, 1839.—She is now suffering severely from headache, especially in the temples; tongue furred, white at the edges, brown and dry in the middle; skin dry and hot; abdomen moderately full and a little tender over the pubic region; urine scanty and high-coloured; posture dorsal; countenance contracted and anxious; manner despondent and pulse 120 beats in a minute, full and hard. R. Venesection $\frac{3}{4}$ fl. xii. Ant. tart. sol. once in three hours. Salts and senna, to-morrow morning to free catharsis. Cool drinks ad libitum. Keep room cool.

Monday 4th, 12 A. M.—Cathartic has operated well, inducing five full dejections; headache somewhat less severe; tongue less coated; urine

* A voluntary association in this neighbourhood, organized, May 12, 1834. It is composed of eight or ten members. Its sessions are holden monthly, at which some one reads a dissertation and the others contribute cases or papers on medical subjects. The remaining time of the session is occupied by *friendly* but *unrestricted* criticism.

somewhat increased in quantity, but still high-coloured; other symptoms remain the same. *R.* Ant. tart. sol. at six and twelve o'clock through the day. *Ipecac. infus.* at nine and three o'clock. *Spts. nit. dul. pro re nata.* Sinapisms to feet. Cold water to head. Drinks and room the same.

Wednesday 6th, 10 A. M.—Found my patient this day much relieved from the pain in the head, but quite deaf; bowels freely open, probably from the antimony and ipecacuanha; less tenderness over the uterine region and at the epigastrium; urine more scanty again and higher-coloured; pulse 110, full but not hard; skin dry, shrivelled and hot; lochial discharge stopped; some delirium last night; pupils contracted and vacant; tongue white and moist; thirst less; abdomen not full and less tender; decubitus dorsal and sliding; countenance anxious and desponding. *R.* Salts and senna, to be taken immediately. Calomel and James' powders at six and twelve o'clock. *Ipecac. infus.* at nine and three o'clock. *Spts. nit. dul. pro re nata.* *Pil. opii comp.* after four free dejections. Room cool and perfect rest.

Friday 8th, 4 P. M.—Found the patient, at this record, apparently much better. Salts and senna had operated well, and after four dejections, by the aid of the pill, she had rested well on Wednesday night; abdomen was but little tender. Thursday night was again delirious, talking in her sleep; in the afternoon had two or three full dejections, but, taking a pill, as before, the bowels have since been quiet. After this had some appetite, and eat some few mouthfuls of wheat bread toast. The pulse is now 100 beats in a minute, full and soft; some perspiration about neck and shoulders; urine scanty and high coloured; tongue coated, white at edges and brown in the middle; some thirst, especially for cold drinks. *R.* Cal. and James' powders at six and twelve o'clock. *Ipecac. infus.* at nine and three o'clock. *Spts. nit. dul. pro re nata.* Sinapism to pubic region. Room and drinks cool.

Sunday 10th, 4 P. M.—Passed the night after the last record very badly; was delirious; very restless; had more fever; more thirst; three dejections; skin hot and husky; tongue more furred. On Saturday morning had epistaxis; grew worse through the day; at night was restless and delirious; very thirsty; no sleep. Has grown worse to-day, since morning; has become quite helpless; is somewhat comatose and has a muttering delirium; at times restless; skin hot, dry and harsh to the feel; is very thirsty; respiration much accelerated; pulse 120, full and hard; abdomen more tumid; tenderness increased over the uterine and epigastric regions; pain darting down the lower extremities quite to the heels and very acute; back burning and painful; tongue brown and cracked; has had no fullness of the breasts nor any lochial discharge since the 6th.

R. Venesection $\frac{3}{4}$ fl. xii. Calomel and jalap, followed by salts and senna. Epispastic six by six to the uterine region. James' powders and calomel, one in six hours. Continued rest as before.

Monday, 11th, 10 A. M.—Cathartic did not operate until after one enema, nor then until one o'clock A. M., this morning; had five dejections and then took a pill of opium, soap and camphor; respiration hurried and occasionally sighing; abdomen not full, but tender upon moderate pressure, just above the pubis; has great thirst; skin hot and dry; tongue brown and cracked in the middle, edges dark red; no secretion from salivary glands or the kidneys; delirium continually present; pulse 130 and small; some cough but dry; eyes closed; pupils contracted; lips brown

and dry ; blister beginning to fill. R. Calomel 1 gr. at six and twelve o'clock. James' powder 3 grs. at nine and three o'clock. Spts. nit. dul. pro re nata. Room and drinks cool.

5 P. M.—Patient evidently sinking, no improvement in any of the symptoms ; blister filled well and has been twice dressed with cabbage leaves ; some vaginal discharge since morning, dark coloured, grumous and fetid ; abdomen more full and tense ; coma more profound and constant ; pulse 140, very small and occasionally intermittent.

I now learned, for the first time, that on Friday preceding my first visit, the patient had pushed a common *knitting needle* forcibly up the vagina, with the intention of procuring the abortion. Great pain immediately followed, succeeded, in twenty-five or thirty minutes, by the hemorrhage, and, in five or six hours, by the abortion. She confessed having attempted the same operation one week before, but did not succeed. This was related by the mother-in-law of the patient, who lived in the same house with her ; and, as the patient was now unable to hold conversation, nothing further could be elicited. R. Epispastic six by three to nape of the neck. Continue as at last visit.

Tuesday 12th, 10 A. M.—Met my friend, Dr. Wilder, in consultation. No dejection since yesterday at sunrise ; some perspiration this morning about the face and neck ; respiration hurried, the inspiration being spasmodic ; is profoundly comatose ; has urinated once since last record, urine very high-coloured ; face pallid ; tongue brown, cracked, dry and occasionally bleeding ; bowels rather full but not tympanitic ; borborygmi ; bloody serum oozing from the angles of the eyes ; mucus about fauces and throat gives much trouble, cannot expectorate it ; blister on neck but little filled ; pulse 130, small and frequently intermittent. R. Continue as yesterday with the addition of small doses of sulphate of magnesia.

5 P. M.—Patient moribund and died at 10 o'clock P. M. in the same evening. A post-mortem examination, though urgently requested, was obstinately refused.

CASE II.—On Tuesday, March 29, 1842, I was called, at 9 o'clock P. M., to visit a patient, a widow, said to have been attacked with a sudden and alarming uterine hemorrhage, which, on my arrival, I found to be the case. On inquiry, I learned there had been a moderate hemorrhage since Sunday morning last, until a short time before I was called, when, on going to the vessel to urinate, something like half a pint of blood passed off at once, and the patient took her bed in great alarm. Examining the cloths I found the hemorrhage still going on, attended by severe intermittent pains, like those of a woman in labour.

Prescribing a strong dose of laudanum, I then asked for an explanation of the symptoms. After a short pause the patient confessed that she believed herself pregnant, and that she had arrived at the third month of utero-gestation. Finding herself in this unfortunate predicament, she had, from the first disappearance of the menses, been continually taking or doing something to provoke abortion. To use her own expression, she had used a "basket full" of double tansy, and wound off by deep and frequent potations of savin tea. She had worked hard, used the warm bath frequently, exposed herself to "all weathers," taken repeated doses of drastic cathartics, and gone through a regular course of gymnastics, by jumping daily from the dinner table for weeks, but all to no purpose ; her burden and her shame were not to be got rid of so easily.

Although, five weeks ago, these measures had induced a scanty hemorrhage, still she was not relieved. Driven now almost to despair, she made application to a physician in the neighbourhood for further aid. In justice to the profession, I should say that this physician had been expelled from the Massachusetts Medical Society, for a wilful disregard of its by-laws. The first prescription of the Dr., which was procured by the *cher amie* of the patient, consisted of a box of pills, of which three were to be taken at bed time and three in the morning. The only effect of this prescription was a powerful and long continued catharsis, which, not producing the desired effect, moved her to make a personal visit to the Dr. about four weeks ago.

At this time an instrument (from the description of the patient, a female catheter) was passed up the vagina, though without giving her any pain. The attempt to rupture the membranes (as I suppose was intended) did not succeed; a phial of drops, which tasted strongly of creosote, were then given to the patient, to be taken night and morning, and she was promised that, in a few days, she would get rid of all her difficulties. The few days were passed in great anxiety, but neither the instrument nor the drops produced any effect. A second visit was now paid to the Dr., eleven days previous to the present attack, and she again submitted herself to his manipulations. The use of the instrument, this time, gave her great pain, and was succeeded by the discharge of a colourless fluid, which continued to drizzle away, in small quantities, up to the irruption of the hemorrhage. From this time the external organs of generation have been tumid and painful, and, at this present time, are so much so, that a partial examination, *per vaginam*, gives the patient great pain. The vagina is much contracted so as not, readily, to admit the passage of a single finger. At the last visit the Dr. also gave her a second phial of drops, to be taken, in teaspoonful doses, morning and night. These drops put the patient in great pain, especially about the back and loins. The pains were intermittent and seemed like labour pains; and, as the patient had been the mother of five children, I think she may be considered as a competent judge. After taking them for a few days, she says, they made her *blind*, and, becoming alarmed, their further use was discontinued.

Having given such portions of the patient's confession as are materially relevant to a proper understanding of the case, I now proceed with its continued relation.

The dose of laudanum procured but little, if any, relief from the pains. The hemorrhage, not so profuse, however, as at first, still continued. Being called at this juncture to attend another case, I directed the attendant to repeat the dose of laudanum, with three grains of acetate of lead, should the hemorrhage continue profuse. On my return at 2 o'clock A. M., three hours afterwards, I found the patient very weak and faint but, for the last hour the hemorrhage had not been severe. As yet nothing had passed off, so far as I could discover, which looked like *fœtus* or *secundines*.

From this time the hemorrhage was moderate and the patient soon rallied. The pains had abated somewhat of their severity, though they were still strong. There was a constant oozing of blood from the vulva. Through Wednesday and the following night the symptoms continued much the same, and the patient, having had a change of body linen and been removed to a fresh bed, was made quite comfortable.

Thursday, March 31st, was ushered in by a slight increase of the pain and hemorrhage. The patient, without waiting for advice, had this morn-

ing, taken a strong dose of salts and senna, and which was now (11 o'clock A. M.) operating powerfully, and putting her in great pain. I immediately gave her 40 drops of laudanum and directed her to take some warm gruel. The dejections were soon checked and she became comfortable. At 3 P. M., I was again called in great haste, and on my arrival, was told that after three or four strong pains, something had come away different from anything which had yet been seen. On examination, I found in the vessel an organized substance, which, viewed in situ, preserved the form, generally, of the uterus. Its whole outer surface, except a small portion, was completely shaggy, the papillæ or flocculi being from half a line to a line in length. At the superior portion, corresponding to what I supposed to have been the surface of attachment to the uterus, it looked like the corresponding surface of a placenta, except that the colour was almost black. The smell of putrefaction was readily discernible, and some spots were plainly undergoing the process of decomposition. On further examination the mass was found to be a sac, about three inches long and one and a half inches in diameter, at its widest part; preserving, generally, the shape of a pear. The walls varied in thickness from one-eighth to one-sixteenth of an inch, except in those portions where decomposition had begun to take place, where they were much thinner. At its inferior end there was a slit or opening extending up about one-third of the way towards the top of the sac. On turning the sac inside out, the inner surface was found smooth and shining and of a dull lead colour. At the top three or four large vessels, some of them (to use that expression of universal comparison among anatomists) as large as a *crow quill*, stood somewhat prominently out from its surface, radiating from a common centre, and from which, on being squeezed, a jet of black blood was made to issue. I could not discover any rudiments of an umbilical cord, or anything which looked like a fœtus, neither had anything of the kind been seen since I was first called; and, supposing the patient to have told the truth (and I doubt not she did, as she still insists that she was pregnant) nothing had passed before. The substance under examination I supposed to be the remains of a placenta and its membranes; the outer one the shaggy chorion and the inner one the amnion. From this time the patient did well. The lochial discharge, as I termed it, continued in moderate quantity for seven or eight days; there was little soreness of the bowels, and the patient rapidly recovered.

Supposing this case had been made the subject of a judicial examination, and the question had been put, Was this woman pregnant? what should have been my answer?

In favour of the affirmation of pregnancy are the following reasons:

1. There was an acknowledgment of frequent previous sexual intercourse.
2. The patient had felt the nausea and other sensations usually attendant upon her former pregnancies.
3. There had been an enlargement of the mammæ and a deeper colour of the areolæ about the nipples, since the commencement of the reputed pregnancy.
4. There was a discharge of a colourless fluid after the last operation for procuring the abortion, for eleven days, up to the period of the hemorrhage.

5. There was thrown off from the uterus what had the appearance of a placenta and its membranes.

6. There was a discharge following their expulsion, for seven or eight days, and which was presumed to have been the lochial discharge.

7. The patient, who had been six times pregnant before, expressed no doubts of her present situation.

In favour of the negation of pregnancy are the following reasons :

1. No fœtus had been discovered by myself, and, if the patient told the truth, none had passed off when I was absent or before I was called.

2. There were no remains or rudiments of an umbilical cord attached to what I have called the placenta.

3. The mammæ were now flaccid and the areolæ pale.

That the fœtus had been expelled before I was called, or while I was absent, and concealed by the mother or the attendant, I do not believe, as the patient, in that case, having so strong a motive, would, in all probability, have denied the pregnancy, which she does not to this day. But if she was pregnant what became of the fœtus? Might it not have been destroyed by the process of decomposition and passed unnoticed among the numerous coagula at the time of the abortion? That it was thus disposed of I am inclined to believe. The patient, at most, could not be more than three months advanced in pregnancy; it was her belief that the ovum had been, for some time, dead, before the incursion of the hemorrhage; this, with what had been done to dislodge it, together with the flaccid state of the breasts, for some time before the flooding, seems to confirm the supposition of pregnancy. If this state of the case was true, the fœtus was not more than two inches long at the time of its death; little or no bone had been formed, and, after the rupture of the membranes, for eleven days preceding the hemorrhage, it was placed in very favourable circumstances for its rapid decomposition.

20. *Delivered in what month of the year.*—Of the 932 children, the months in which they were born were returned in 838 times, which may be seen by an inspection of the following table. As will be seen, the births were distributed, in pretty nearly equal proportions, among the different seasons of the year; proving that the common notion prevailing in this region, that there are more births in summer than the other seasons is not correct. The table is to be read thus: 84 children were born in January, 67 in February, and so on.

Months of the delivery of 838 children.

Months,	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
No. of Children,	84	67	85	50	71	57	75	73	80	57	66	73

The following table exhibits the distribution of the births among the different seasons of the year, as follows :

Seasons of the delivery of 838 children.

Seasons, No. of children,	Spring. 206	Summer. 205	Autumn. 203	Winter. 224
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Of the individual months, March furnished the largest number, 85; while the succeeding month, April, furnished but 50, the smallest number.

The question which was respectfully submitted to the Malthusians for solution, in a former communication to this journal, on the *infrequency* of births in the month of April, (the first day of which is emphatically the *moving-day* of the universal Yankee nation) yet remains unanswered.

21. *Delivered at what hour of the day.*—Of the 932 children, the hour of birth was noted in 844 instances, as may be seen by the following table. By it we learn that 440 labours were completed between midnight and mid-day, leaving 404 to be accomplished in the remaining half of the twenty-four hours. Between 6 o'clock P.M. and 6 o'clock A.M. 456 labours were completed, leaving 388 to be accomplished in the remaining portion of the twenty-four hours. The last collocation furnishes 68 more cases for the night than the day time, equal to 54 per cent. for the night and 46 per cent. for the day. By the hour, is intended that the deliveries were finished *nearer* that hour than any other. The results of the table corroborate the popular opinion, that more children are born in the night than the daytime. The table is to be read thus:—58 children were born at 1 A.M., 38 at 2 A.M., and so on.

Hours of the birth of 844 children.

Born A.M.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	58	38	44	36	49	26	34	30	29	42	34	20
Born P.M.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	30	34	32	47	27	29	30	33	35	36	45	26

22. *Twins.*—Of the 927 labours, five were cases of twins, thus increasing the number of children to 932. By the following table it will be seen that in four cases there were two placentas, one for each child; while in one case there was one placenta with two cords. No placenta was delivered until the birth of both children. The following table exhibits an analysis of these cases:

Analysis of 5 cases of twins.

No. of cases.	Age when married	Present age.	No of Pregnantcy.	Hours in labour.	Present-tailon.	Full time or not	Sex.	Weight.	Alive or dead.	Died in first month.	Interval between births.	No. of placentas.
1	20	27	4	10	V.	9	F.	5 $\frac{1}{2}$	A.	D.	15	2
2	24	36	5	4	B.	9	F.	4 $\frac{3}{4}$	A.		15	2
3	24	40	7	24	V.	9	F.	7 $\frac{1}{2}$	A.		15	1
4	17	37	9	22	V.	9	M.	7 $\frac{3}{4}$	A.		25	2
5	28	36	2	12	F. to p.	9	M.	7 $\frac{3}{4}$	A.		30	2
					V.		D.	6 $\frac{1}{2}$	D.			
					V.		F.	8 $\frac{1}{4}$	A.			

The breech and the face to the pubis presentations occurred, in both instances, in second children. No difficulty was experienced in their delivery. The average weight of the children was $6\frac{3}{4}$ lbs. The mothers all had rapid recoveries.

23. *Instrumental deliveries.*—Of the 932 children 5 were force delivered, viz.: 2 were delivered by the aid of the blunt hook after the operation of craniotomy; 1, by the help of the forceps; 1, by the lever, and 1, manner not returned. The following table exhibits the ratio of instrumental deliveries, occurring in the practice of different accoucheurs :

Ratio of instrumental deliveries by different accoucheurs.

Accoucheurs and their residence.	Ratio; 1 in every
Dr. Carus, Dresden.	13
Dr. Ritgen, Geissen.	9
Dr. Kluge, Berlin.	15
Drs. Minden and Merrem, Cologne.	12
Prof. Andree, Breslau.	35
Naegelé, Heidelberg.	28
Dr. Voigtel, Magdeburg.	5
Dr. Kustner, Breslau.	36
Dr. Siebold, Marburg.	9
Dr. Boer, Vienna.	96
Madame Boivin, Paris.	183
Dr. Merriman, London.	98
Dr. Bland, (West. Gen. Dis.,) London.	158
Dr. A. B. Granville, do.	80
Dr. Beatty, (New Hospital,) Dublin.	99
Dr. Clarke, (Dub. Hospital,) do.	162
Dr. Collins, do.	114
Dr. Metcalf, Mendon, Mass.	187

One of the cases in which the operation of craniotomy was performed, was reported in the article formerly published in this journal. The following account of the other is condensed from a communication made to the Union Medical Association, before referred to.

Mrs. W. M—— was taken in labour with her first child, Saturday, Feb. 28, 1841, at 10 o'clock P.M. She is of small stature, and her age 36. Has been married eight years, and has always enjoyed good health up to the present time.

Sunday, March 1st. I was first called at daylight. Found the patient quite comfortable and sitting up, the pains being slight and recurring after long intervals. On inquiry, found the membranes had been ruptured before my arrival; only a small quantity of water followed the rupture. The patient being so comfortable, an examination, per vaginam, was delayed for about two hours; when, on introducing the finger, the head of the child was readily distinguished. The presenting part was easily raised by moderate pressure, and quite a flow of the liquor amnii followed. A few pains succeeded the examination and were found to partake but little of the expulsive character. From the first, I had noticed that the uterine tumour was more pointed and cone-like than any case I remembered of noticing before. Applying the hand to the abdominal parietes, the uterus seemed to be closely contracted about the child, and to stand up very much in the shape of a sugar-loaf. While making an examination soon after this, and, while raising the head upon the point of the finger, a noise,

like the escape of air, was distinctly recognized both by myself and the attendants. At the same time a fetid odour was perceived, which also was present during the remainder of the labour. I expressed my conviction that the child was dead; but the mother affirmed that, within a short period of time, she had plainly felt its motion, and she was not to be convinced that she was mistaken. Applying my hand to the abdominal tumour, for some minutes, I was satisfied that she had taken an occasional spasmodic action of the abdominal muscles or of the uterus, for the motions of the child.

From this time until 9 P. M. the pains continued very feeble, not occurring oftener than once in twenty-five or thirty minutes. The patient continued cheerful; sat up or laid down as suited her pleasure. From this time until *Monday, March 2*, at 1 A. M., the pains increased in power and frequency, though they were not, at any time, of a character to be called striving; nor did they recur oftener than once in eight or ten minutes. The head had now become fixed in the bony pelvis, the vertex being the presenting part, and the face turned towards the left sacro-iliac junction. From this time until 7 o'clock, P. M., the pains continued to decrease in force and frequency, and, by 8 o'clock, had entirely ceased.

Tuesday March 3d, at 3 A. M., concluded to administer a dose of ergot. Its specific operation was noted at about the expiration of twenty minutes; but the contractions it superinduced were not striving or expulsive. The effect lasted about fifteen minutes, during which time the pain was pretty constant, slight remissions only being noticed. There was now occasional vomiting; induced, as I suppose, by the distension of the stomach with drinks aided by the ergot. At 9 A. M. the urinary bladder, which had become quite distended, was thoroughly evacuated by the natural efforts of the patient.

Finding her now very comfortable, able to walk from one room to the other without assistance, and getting a refreshing nap now and then, I concluded to wait for further efforts of nature, hoping the process would yet be accomplished without my interference. At 3 P. M., being sixty-five hours from the commencement of the labour, I again administered another dose of ergot. This brought on a teasing pain of fifteen minutes' duration, but without producing any change in the position of the child's head.

Despairing of seeing the delivery accomplished without instrumental aid, I now proposed that counsel should be called in. Dr. Willard, of Uxbridge, was soon joined with me in the case. After an examination, per vaginam, and a review of the whole case, and considering the protracted length of labour, it was concluded to make one more trial with the ergot; and, in case of its failure to accomplish the object, to proceed at once to the instrumental delivery of the child. The ergot was again administered in an increased dose, but with no better success than before. After vainly attempting to accomplish our object with the lever and forceps, the child's head was opened, the brain evacuated, and the delivery completed by the aid of the blunt hook. The womb contracted readily and strongly upon the child, as it was slowly delivered; and, after waiting ten or fifteen minutes, the placenta followed without any difficulty. The operation lasted some twenty minutes, but without any considerable pain to the patient. But little flooding followed, and, after the exhibition of an anodyne, the patient was put comfortably in bed.

An examination of the child proved that it had been, for some time, dead; as the cuticle slipped easily off from any part of the body. Scattered about,

upon various portions of the surface, were quite a number of vesicles, filled with bloody serum, seated upon livid bases. The cadaverous fetor was also very sensible, so as to be readily distinguished in all the adjoining rooms.

Had labour pains of ordinary intensity been present in this case, I doubt not the delivery would have been completed without the resort to artificial means, and within the first twenty-four hours from its inception.

24. *Period between the delivery of the child and the expulsion of the placenta.*—The following table exhibits that period in 523 cases out of the 927 births, and is to be read thus: the placenta was expelled 166 times in 10 minutes, and so on.

Period between the birth of the Child and the expulsion of the Placenta.

Period,	10	15	20	25	30	35	40	45	50	60	1½	2	2½	3	9	24
No. of placentas,	166	272	29	17	13	3	7	2	1	3	2	3	2	1	1	1

No case of retention of the placenta was followed by any unfavourable termination of the labour. Those retained nine and twenty-four hours were returned by my correspondents without any remarks. I am aware that many physicians do not wait so long, as the shortest period set down in the above table, for the delivery of the placenta. I consider, however, that it is safer to wait a little while, so that the uterus may have time to contract upon the placenta, and thus render the patient less liable to hemorrhage after its expulsion. Of course, if the hemorrhage is urgent, after the delivery of the child, I do not wait so long as I otherwise should, but am governed by that circumstance when to interfere in the process.

25. *Placentas, force delivered.*—In 838 cases where the delivery of the placenta was noted, it was force delivered in six cases. Of these, one was delivered at the end of three hours without flooding; three, soon after the delivery of the child, on account of that accident, one of which was upon the edge of the os uteri, and two by reason of an hour-glass contraction. One of these last occurred in a patient forty-three years of age, in labour with her first child. After waiting some forty or forty-five minutes for the delivery of the after-birth, and finding, by external examination of the abdomen, that the uterus was irregularly contracted, and the hemorrhage increasing, I passed my hand through the vulva and os uteri, as far as the contraction, without much difficulty. Here I was stayed for some time, as the contraction was close and not readily disposed to yield. By degrees, however, the contraction was overcome; the placenta, lying loose, was readily grasped, and slowly and safely delivered. After the contraction was relaxed, I did not perceive that there was any disposition to its return again. The patient suffered considerable pain during the operation, and, towards its close, became quite faint and exhausted. The guarded exhibition of stimulants soon produced a moderate reaction; the patient rallied and was soon quite comfortable. No untoward accident afterwards occurred, during her recovery. The other case of hour-glass contraction was followed

by puerperal fever; not, probably, however, on that account, as the patient was living in a region where there was, at that time, an evidently epidemic tendency to that disease.

26. *Previous children.*—Of the 927 cases, the previous children which the mothers had given birth to was noted in 377 instances. The result of this inquiry is embodied in the following table.

Previous Children of 377 Mothers.

	Total.	Total dead.	Total living.
No. of children,	1176	287	889
No. of males,	662	186	476
No. of females,	514	101	413

It will be understood that the previous children were reckoned from the last accouchement. Of the males, 28 per cent. had died, while, of the females, only 19 per cent. had died, thus showing the mortality to be nine per cent. greater among males than females. Among the whole number of the previous children, 1176, there were ascertained to have been but a single pair of twins.

27. *Concluding Remarks.*—I am aware that the pages of the preceding communication contain little that is calculated to awaken the wonder or excite the curiosity of those who look into books, with the expectation of being startled into amazement, by the rhetorical embodiment of some bold speculation. The fire must be Promethean, or it kindles no emotion in those who fly with the wings of Icarus. “*Includere gemmam in scyphis aureis,*” or truth, with all her efforts, gets but a sorry company of listeners. But once in an age, suppose some wonderful problem is solved, *per saltum*; still, progress, in the main, must be slow, plodding, and accomplished by degrees. For the mass of travellers, who are striving for advancement on the highway of knowledge, amongst all its astonishing inventions, the ingenuity of man has yet achieved no railroad conveyance for the body, and no telegraphic communication for the mind. The multitude, then, must content themselves with the *old* way, uninviting and rugged though it be. They must content themselves with storing up isolated and disjointed materials, without stopping to inquire who is to win the crown of immortality, by a philosophical induction from their fortunate arrangement and comparison.

In the present communication I have designed to collect and lay by for future use, a few facts connected with an important branch of our profession. Trusting that some good may be accomplished by the labour I have bestowed upon their arrangement, they are respectfully submitted for the consideration of those who are engaged in the practice of the obstetric art.

Mendon, June 1, 1847.

ART. II.—*A very early Human Ovum, presenting the ununited folds of the blastoderma about to form the amnios.* By MYDDELTON MICHEL, M. D., Lecturer on Anatomy and Physiology, Charleston, South Carolina, [with a plate.]

IN endeavouring to establish the laws which regulate the phenomena of development—that deeply interesting topic of philosophical anatomy—all the forms of organic life have been arrayed in a vast field of observation and research.

Speculative inquiries, yielding to the rigour of experimental investigation, have found a just interpretation in the interesting facts which now enrich this department of physiology, and which, interwoven as they must soon be in one fundamental plan of organization, will constitute a new era in the science of which they form a part.

In this newly, and only partly explored province, though our knowledge has progressed with almost electrical rapidity, thanks to the labours of a Baer, Coste, Serres, and Barry, yet no small and fertile source of discovery and instruction still remains as an allotment for the assiduous inquirer. Attention was first directed, as was very natural, to the development of organisms the more readily obtained and promising the surest results, rather than to such as should more properly have ranked as the type of comparison, as the guide in the chain of complex phenomena; it does not therefore surprise us, that the first discoveries in these extraordinary organic operations were the result of experiments instituted on the domestic fowl by Baer. Subsequently, these important facts were more correctly interpreted by experiments made in the higher series of mammals by Prof. Coste, while they in their turn received that confirmation which a modification and simplicity of development, observable even among the invertebrates, seemed afterwards to justify. However, our imperfect knowledge of these organic processes in some classes of beings, still constitutes a veritable interruption in the series of observations which this plan proposes. There are many of these classes again of which very little is known and less devised, that would certainly reveal important truths—we may instance the marsupiala—while all our knowledge of other developments, where the usual means of research are impracticable, are inferences drawn from analogy, being a dialectical process the more irreproachable, the more extensive our acquaintance with the rest of the series, though not itself possessed of all the share of proof which the gravity of anything like fallacy would demand. To this category belong whatever observations have hitherto been made concerning the earlier periods of human development, from the impracticability attending any empirical examination of the question. The similarity of some of the transitory stages of animal development, to the subsequent developing acts of the human embryo, as also the appa-

Fig 1.

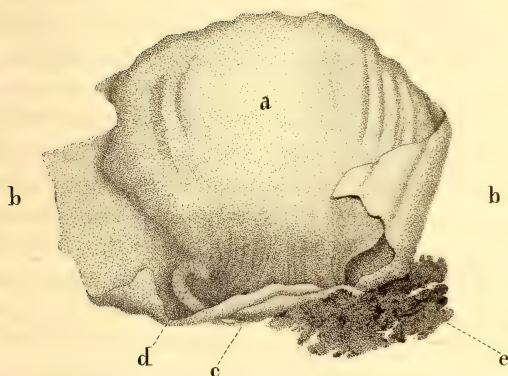


Fig 2.



- Fig 1 a. *Umbilical vesicle, its wide opening into the embryo is clearly seen.*
 bb. *Outer layer of blastoderma cut through and reversed to bring the umbilical vesicle into view.*
 c. *Back of embryo destitute of any covering. The cephalic extremity d is re-
 -caved upwards beneath a fold of the blastoderma which is seen surrounding
 it as a nebulous outline.*
 e. *Villous piece of organizable lymph that was inseparably connected with
 the ovum.*

Fig 2. *Size of ovum after soaking in alcohol.*



rent identity of their primeval germs—the initials of creation—fully authorize the conclusion, that the intervening stages in the human species catenate with those of other animals, without implying, on that account, that man is the integral expression of any one of the series, an opinion as erroneous as unscientific, divesting the truths of their ennobling bearings, and justly to be repudiated as possessing the most dangerous tendency.

While I exonerate myself from all share in divulging opinions hostile to existing sanctions, under the form, whatever it be, which they may assume in this or any of my future contributions to the subject of organic evolution, yet I so far protest against the habit of interpreting facts to support particular views, instead of relying on the correctness of these, as the means of their defending themselves, that I will give a further exemplification of this law of progressive formation by the history of what I consider to be the earliest human ovum on record, next to that described by Allen Thomson.

This curious specimen of which I am in possession, is extremely valuable, as its condition is perfectly normal—a circumstance so rare in cases of abortion, that most specimens of early human ova have been lost to science, by falling into the hands of those who, not being familiar with the subject, have by their descriptions given rise to the greatest variance of sentiment. It is of still greater value as verifying the accuracy of that singular parallelism in development, of which it is a glorious exemplification, it being impossible as yet to distinguish to which order the being appertains; while its early age is a further proof of the identity in the process which evolves the membranes, as well as of the synchronical order in which they appear. These circumstances justify my regarding an account of this specimen as a contribution towards supplying the gap existing, among the observations made on the human ovum.

It was in the month of June last (1846) that I was consulted by a gentleman of this city, in behalf of his wife, as he was desirous of ascertaining the nature of a slight sanguineous discharge, attended with much pain, which had greatly inconvenienced her, then nursing a child at the breast. A clot of blood of singular appearance that had been eliminated, was more particularly the object of his visit, knowing, as he stated, that my attention was directed to the subject of ovology, and believing the accident in question to have occurred in consequence of conception.

The small quantity of blood passed, being scarcely in relation with the extreme inconvenience that ensued, was an objection to its being a return of the menstrual act, as this was unattended habitually with any uneasiness; but the very delay in the re-appearance of the catamenia, and the child at the breast seemed also to militate against the probability of conception, and consequently of abortion having taken place, though I inclined to this last opinion. A simple inspection of the regular shaped clot seemed to favour a belief which a more careful examination was about to corrobora-

rate. The gentleman's testimony positively implied that if it were anything of the kind, it must surely be very young, and the details which were given were of a nature not to be questioned.

Therefore, with an anxiousness which so unexpected an occurrence was calculated to excite, the substance was submitted to ablutions with alcohol and water, and by removing the clotted blood, soon exposed a small fleshy body to view. As my curiosity was aroused by the discovery of this little body, I proceeded to make an inventory of its contents, with all that precaution which should be the invariable prerogative of so small, so delicate an object. Resorting to another vessel containing diluted alcohol, the better to examine this substance, a small incision was made in a smooth, semi-transparent and spherical portion projecting beyond the rest, which I then recognized to be the reflected portion of the decidua, inasmuch as a partly transparent vesicle resembling an early ovum lodged within this receptacle, passed out very readily, floating in the surrounding liquid. So exceedingly delicate was this second object of attention, that I deemed it advisable to leave it awhile, to become strengthened in its structures by the action of the alcohol before I should proceed. When a further examination was instituted, I was enabled to determine what follows, and had the pleasure of exhibiting the same to Professor Prioleau of this city.

A very short contact with the alcohol brought the condition of this little ovum very plainly to view, and at once pointed out the fairest resemblance to the ovum in the uterus of a rabbit. Indeed, a blastodermic formation had already taken place, of which I was not apprized, until by the imbibition of alcohol its double layers were separated. The vitelline membrane had disappeared, the chorion which must have somewhat advanced had been left behind, for around the ovum hung an araneous structure, which appeared to be the incipient bonds of its connection with the chorial covering from which, in all probability, it had been removed.*

Though this flocculent film existed more particularly upon one side, I am not prepared to say, whether this really corresponded to a part of the chorion, nor had it any more the appearance of chorial villousities than have (in my opinion) similar projections of the vitelline membrane in the rabbit. Through the transparency of the ovum could be distinguished the inner layer of the blastodermis, as an encased sphere, forming the umbilical vesicle. In turning over the ovum, there appeared to be on one side a thickening of its structure, as if a bit of organizable lymph was connected with it just at this spot, but on cutting through and reversing the outer layer, this appearance proved to correspond with the first and earliest condition of the embryo. The umbilical vesicle towards the embryo was but slightly constricted; this was its principal feature, no vascularity being per-

* I regret that having thrown away the decidua with the clotted blood in which it laid, I deprived myself of the only means of determining the above question.

ceptible. The embryo had advanced in development further than the *nota primitiva* or *tache embryonnaire*, as it exhibited a cephalic and caudal extremity. The umbilical vesicle entered widely on the anterior surface of the embryo, but I could discover nothing which indicated the presence of an alimentary canal, consequently no allantois was as yet formed; on the lateral surfaces not the most remote sign of thoracic or abdominal tubercles were discoverable. The ovum was evidently at that period of development, in which the outer layer of the germinal membrane begins to fold itself over the back of the embryo to constitute the amnion. It was to verify in the human ovum the commencement of this interesting process that I felt most desirous, though at first from the difficulty attending its detection, I supposed it not to have commenced, but on tilting the embryo upwards with the point of a needle to bring the light to bear upon the cephalic extremity, I could then observe a nebulous outline following its convexity for a little distance backwards, which was plainly the fold in question. It had advanced so little over the embryo, that much of its back laid bare against the coagulum of lymph already mentioned, but I could here readily pass the head of a very small pin beneath the cephalic hood. The caudal hood adhered to the coagulum, and consequently was not interfered with, lest the specimen might be injured before I delineated it. The back of the embryo presented a slight groove, though the vertebral canal was certainly not open. (*Vide Plate.*)

Here is the most beautiful example of human development ever seen; unexceptionably similar to other species of ova at the same period of their changes. Its disconnection with the chorion, which must have been in an incipient stage of formation, implied the absence of the allantois, a structure as essential to the nature of the chorion as it is indispensably requisite in conveying blood-vessels to it; no amnion existing inferred the early transformations of the germinal membrane and the extensive umbilical opening whose obliteration coincides with the perfection and completion of the amnion; while, again, the entire progress of the embryo accorded with the succession in which the membranes were being formed. Mindful, indeed, of the rapidity of development after the egg reaches the uterus, we cannot suppose the present ovum to have sojourned more than 60 to 80 hours in that cavity, as it had advanced but little further than the unfolding of the blastoderm.

If now we review the several descriptions relating to the earliest periods of embryonic formation, they all, with one exception, will prove further advanced than that which we have just had under notice.

Sir Edward Home and Bauer* in 1817, attempted the description of a very young human ovum, in a paper obnoxious to the charge of such unbounded ignorance of the subject canvassed in it, and such painful blind-

* Philos. Trans., p. ii. p. 252, 1817.

ness to the truth, that we are surprised at the currency it has for a long time received, and only allude to the publication as valuable in a historical point of view. This was clearly no ovum, and if it had been, the very means employed in the examination would have radically destroyed it.

On the authority of Dr. Allen Thomson, I am disposed to regard the fifty ova described by Dr. Pockels* (only four of which were between eight and sixteen days) as all of a later date than that specified, as the drawings show the evolution of structures which cannot accord with the assumed age.

The specimen recorded by Edward Weber in 1830, would certainly be of a most recent date if there were not that variance of account which invalidated all testimony. In one publication it is stated that an ovum of the earliest development was present; while another account places its existence in the equivocal light of a possibility, on the plea of an ovarian vesicle appearing as if it had just discharged its ovum. It is but justice to Weber to state that I am indebted to the excellent paper of Allen Thomson† for an account of this ovum, and it should be stated that neither Allen Thomson nor myself has seen Weber's original communication. Nevertheless Bischoff who probably has carefully read it, assigns very little value to it.

In 1833 Velpeau‡ described three human ova. Two of these were diseased, and I am inclined to believe were of a certain development, for he first speaks of their being composed of a simple vesicle, and that this possessed a villous appearance, though there were no traces of an embryo. This involves some considerable obscurity if not an impossibility, unless we accept these as examples of morbid condition.

The other ovum is the well known and valuable specimen furnished him by a midwife of Paris during the publication of his work on "*Ovologie Humaine*."

But this remarkable ovum was known to be positively thirteen days old. There was an amnion enveloping the embryo; an umbilical vesicle completely formed, and a chorion covered with flocculi. The development of the embryo, though by no means clearly or accurately described, must have coincided with this advanced condition of its membranes.

Professor Muller, in his Archives for 1833, mentions an ovum much farther developed than such as we are considering. With regard to its age I am disposed with Baer and Wagner§ to compute it at twenty-five days, though Muller himself places it at thirty-four days. The embryo was rapidly advancing, branchial clefts and arches were recognizable, and a complete evolution of its membranes had already occurred.

* Heft. xii. Oken's Isis, 1825.

† Edin. Med. and Surg. Journal, 1839, vol. 52, p. 119.

‡ *Ovologie Humaine*, p. 77, 1833.

§ *Histoire de la generation*, R. Wagner (traduit par Habets) p. 147.

With reference to Mr. Wharton Jones'* history of an ovum, which Dr. Thomson regards "as one of the earliest, if not the earliest human ovum, that has been accurately described," there appear to exist difficulties scarcely reconcilable with our present information of ovology. Details of an ovum are given belonging only to such as have just reached the uterus. Now those who have experienced the difficulties attending the examination of the ova of rabbits in a similar situation, who know their extreme delicacy, when it has been our good luck to surprise them in the primitive transformations of the germinal membrane, must hesitate to regard with confidence an occurrence open to so many sources of error as the one related by Mr. Wharton Jones. It is stated that Dr. Mackenzie first fell in with this early example of human development. It was lodged within a perfectly formed decidual membrane which came away from a patient of his. After removing the ovum which was "*the size of a marrow-fat pea,*" he describes it as presenting a "*shaggy villous surface on one side,*" which clearly shows it to have been the chorion. Indeed it was accepted as such both by Drs. Mackenzie and Jones. The former punctured it and perhaps passed the instrument, as he says, "*through the amnion by which some fluid escaped,*" adding "*that nothing more was attempted.*" To say the least of such a manœuvre, it was treating the ovum with very little respect, and that "*nothing more was attempted,*" seems a kind consideration for its condition, if we suppose a moment that it belonged to the early date alleged by Mr. Jones. But this treatment was nothing to that which it ultimately underwent. Dr. Mackenzie sent it to Cork, where Mr. Jones received it in good order after its journey of perhaps three hundred and fifty miles. It is equally positive that delicate as the specimen might have been, it was laid aside for five months, for from Mr. Jones' own account, he examined it "*in the spring of 1836;*" now Mr. Mackenzie's letter containing a description of it is dated November 29th, 1835. Again, Mr. Jones must himself have entertained doubts as to the true age of this egg, as we may infer from a subsequent letter from Dr. M., referring to this very point in which he writes: "*The ovum in question I consider as three or four weeks old. The lady had missed one menstrual period, and thought herself four weeks gone.*"

In presence of these considerations it is difficult to share in an opinion which regards this ovum as having been at its earliest evolution, or to admit with Mr. Jones that "*the embryo had not yet appeared, though the vesicular blastoderm was undergoing the preparatory changes.*" An ovum at this period of development would have required the utmost precaution and delicacy to secure it for microscopical investigation, demanding immediate examination, when it would have revealed unequivocal signs of its age. It would have presented a vitellary membrane invested with a re-

* Philos. Trans., p. ii. p. 339, 1837. Observ. 5.

duced layer of the albumen acquired in its transit through the tube, and the vesicular blastoderma would have filled and lined the inner surface of the vitellary membrane, it could not have possessed a chorion *shaggy* and *villous* on any side, and much less a germinal membrane occupying, as we read, but a corner in the cavity of the chorion, "*imbedded in a fine gelatinous cellular tissue.*"

I am disposed to place a different construction upon this matter, as a circumstance not easily forgotten recurs to my mind, and perhaps will explain it.

In 1845, while at Paris, I was not a little astonished upon examining the uterus of a rabbit, on the twelfth day after gestation, to find in the right cornu, an ovum having all the appearance of being at its blastodermic evolution, while a perfectly villous chorion formed its outer envelop, though no traces of the embryo were present.

Five corpora lutea existed, and the other ova in the uterus, strange to say, were all in the same condition. Professor Coste, in whose laboratory I enjoyed the friendly privilege of conducting my experiments, who also lent me that assistance which his position in science makes me regard as a distinguished honour, observed that he had frequently met with such examples. Struck by disease and arrested in its development, the embryo, amnion, &c., had been absorbed, only leaving a somewhat advanced chorion and the serous layer of the germinal membrane which had not yet adhered to the inner surface of the former. It is not improbable to my mind that such was the nature of the case recorded by Mr. Jones.

In this manner we could account for the apparent inconsistency between its age and its condition. Its size, advanced chorion, resistance to exposure and the variance of opinion concerning its age would then find their proper interpretation.

For a valuable account of another embryo (1837) we are indebted to Professor Coste,* who gives two beautiful drawings representing the most instructive details. This embryo belonged to a late period, comparatively speaking.

A chorion and amnion were formed, the allantois was highly developed, slightly adhering to the inner surface of the chorion through means of the *magma réticulé*, or gelatinous substance enveloping the former. Muller,† who has re-copied these beautiful figures, computes the age of this ovum at sixteen to twenty days; but as Professor Coste in his work specifies no particular period, I myself consider it younger, regarding Velpeau's case as a criterion of development at the thirteenth day.‡ The authority of Vel-

* Embryogénie comparée, vol. i. p. 227, 1837, and Atlas, Pl. III. figs. 4 and 5.

† Elem. of Physiology (Eng. Trans., Baly), vol. ii. p. 1585, 1842.

‡ I am uncertain whether Professor Coste ever expressed his opinion concerning the age of this embryo. He showed me one, which he estimated at twenty-five days, much farther advanced, and was kind enough to allow my having a drawing made of the same.

peau's statements is to be relied on with implicit confidence. In both cases the embryos were enveloped in a perfectly formed amnion; the umbilical aperture in both cases gave passage to the pedicle of the umbilical vesicle; and though Velpeau does not admit an allantois in the human ovum, we know that he described the same while referring to what he terms the "corps réticulé."

At a later date, in 1839, we meet again with the history of three early ova which came under the notice of Dr. Allen Thomson.* Here we should pause before two of these specimens, which at once attract undivided attention, being, as I would say, at the same period of formation. The first belonging to Professor Cumin, of Glasgow, who submitted it to Dr. Thomson, was truly, as he says, "at the very earliest stage of its development, for it lay with its abdominal side nearly flat on the surface of the umbilical vesicle, the abdomen presenting no appearance of intestine as yet, but merely a long and shallow intestinal groove, which formed a common cavity with the interior of the yolk-sac. Around the intestinal groove, the germinal membrane of the fetal parietes was continuous with that on the surface of the yolk-sac." The second was in the possession of Dr. Reid, of Edinburgh. Of this Dr. Thomson says, "we have here the yolk covered by the layers of the germinal membrane forming the yolk-sac or umbilical vesicle; the embryo consisting principally of the rudiments of the cerebro-spinal axis and the intestinal groove, and in which it may be supposed that the heart also had been formed in its first or simplest condition,—a state of parts, which, if such a comparison can be made, approaches to that existing in the incubated egg of the fowl at the thirtieth or thirty-fifth hour."

For some time, I believed I was the first who had the enviable opportunity of witnessing the earliest steps of development in the human species, but the details given above by Dr. Thomson, are signal proofs of a somewhat earlier period than that which I have described. Here, as in my own case, no allantois or intestine had formed; the abdomen of the embryo lay flat, or nearly so, upon the umbilical vesicle, but slightly constricted, and this same filled the cavity of the serous layer of the blastoderma; the chorion, like mine no doubt, was but partly villous; but, unlike what I have described above, the cephalic and caudal extremities were scarcely discernible; the *laminæ dorsalis* were distinct, having not yet united to form an envelop to the rudiments of a cerebro-spinal axis, itself visible; while we are told the outer layer of the blastoderma was continuous with the fetal parietes and yolk-sac.

Though I cannot but yield the precedence to Dr. Thomson in the face of these facts, yet I may question whether the advantage thus obtained diminishes in any respect the value of the case I have recorded. For a long time the mode of formation of the amnios was a problem involving the greatest

*_Edinburgh Med. and Surg. Journ., vol. lii., p. 129, &c., Nos. 1 and 2 of Pl. II.

obscurity, and in the human subject until the present moment, I may say, was altogether an analogical speculation. Dr. Thomson, aware of this, merely inferred the process to be the same as in other animals, stating "that no observations had as yet been adduced, in which the *united* state of the cephalic and caudal folds of the amnios had been seen in the human fœtus." This, and this principally, is the value of the specimen I examined, in which these very folds were yet separate, and beneath the cephalic one of which I could even introduce a small instrument. I therefore took every care to exclude error. The only source of error might have been the rupture of the adhesion of the amnios, to the serous layer of the blastoderma in the accidental separation of the chorion, but the amniotic opening on the dorsum of the embryo had not a lacerated appearance, but was a veritable fold continuous with the outer layer of the blastoderma—the structure to which it owes its existence. This is what I have endeavoured to represent in the plate as accurately as my limited skill permitted, for it constituted the prominent feature, establishing the method in which the amnion is evolved in the human species, showing it to be identical with what occurs in other classes. I will acknowledge, therefore, that the fortuitous circumstance of meeting this plicated condition of the blastoderma, indemnified me for the disappointment experienced while perusing the memoir of Dr. Thomson. Throughout the paper, I believed that while the embryo was certainly less developed than in my specimen, the membranes were in the same condition in which I had seen them, until I discovered that an amnios had not yet formed, nor was it even commenced.

In the beginning of this paper, it is true, I allude to the ovum as a perfectly normal example, and still opine it is, as far as is compatible with an abortion, when it stands for reason, that an arrest of development occurs not abruptly, but by those slow gradations of decay, which, interrupting the several parts in their successive progress of organization, eventually leave them out of relative unison with each other. Hence, it appears that the embryo was somewhat further advanced than the condition of its amnios would justify; certain it is that no *laminæ dorsales* were visible, though a vertical depression was evident, and yet no intestine or heart was developed, which latter (though I did not examine with reference to it), would have forced itself upon attention had it existed, nor is it probable that such was the case, as there was no evidence of vascularity, no *area vasculosa*.

Bischoff* states that Volkmann (1839) has spoken of an early ovum; but the clavated villousities of a perfect chorion coinciding with a vesicular blastoderma, are sufficient indications to throw great doubt over the matter.

There are yet more cases on record, in which, though suspected, either no ova at all were detected, or when they did exist, offered a comparatively high degree of organization. We meet with interesting communications

* Encyclopédie Anatomique, vol. viii. 1843.

from Burns,* Stanley,† Burdach,‡ Wagner,§ Lee,|| Baer,¶ two other examples by Allen Thomson,** in one of which a *corpus luteum* and decidua membrane were present, but no ovum, though he met in the uterus a vesicle so small and delicate “that it was destroyed as soon as touched;” and more recently in 1843 a doubtful observation by Pauk,†† who, examining the uterus of a young girl at the seventh day after supposed conception, found a Graafian follicle in a turgescient state about eliminating its ovum, and a caduca in an incipient stage; but no spermatozoa were discovered in the vagina, uterus or tubes. In opening the ovarian vesicle the ovum was lost. The woman was perhaps merely at her menstrual period. Again, other and less accurate observations belonging to abnormal conditions of development are recorded by Kieser, Sæmmering, Meckel, Autenrieth, and Hunter,‡‡ but these appertain to periods further advanced.

Such are the remarks which this interesting occurrence suggests, and which it was my intention to have offered much sooner for the press, had it been convenient.

ART. III.—*Isopathia; or, the Parallelism of Diseases.* By JOHN M. B. HARDEN, M. D., of Liberty County, Georgia; Correspondent of the Academy of Natural Sciences, Philadelphia, &c.

Tuberculous or Strumous Types.—Under the head of *Inflammatory Types* we have found that the chief characteristic of the diseases there considered, consisted in the existence in the blood, and subsequent deposition into the tissues of what has been called *plastic lymph*, which resulted either in the *carnification* of an organ or the *formation of false membranes*. To this mode of action Lobstein has well applied the term *EUPLASY*, and such formations may be styled *euplastic*. The diseases which we are now to consider under our present head are all connected by a similar characteristic, with this difference, however, that the products which result from the morbid action are not capable of a perfect organization, but, according to Lobstein, are either *cacoplastic* or *aplastic*, and in this way bear a near resemblance to some of those *purulent diseases* which we have already passed over.

* Edin. Med. and Surg. Journal, vol. ii. p. 1, 1806, and Anat. of the Gravid Uterus, p. 10.

† Med. Trans. of the College of Physicians of London, vol. vi. p. 414, 1820.

‡ De fœtu humano adnotationes, Leipzick, 1828.

§ Loc. cit., p. 146.

|| Medico-Chirurgical Trans. of London, vol. xvii. p. 474, 1832.

¶ British and Foreign Review, No. 1, Jan., p. 238, 1836.

** Loc. cit., p. 122.

†† Archives Générales de Médecine, vol. iv. (4e Série) p. 80, 1844.

‡‡ Burdach Physiologie, vol. iii., p. 332.

Under our present head we propose to investigate three species of disease, which we regard as being perfectly distinct: these are, first Scrofula, secondly Carcinoma, and thirdly Hydatids and Entozoa generally; and it shall be our chief object to point out the *modifications* which these diseases may undergo while they remain *pathologically the same*.

The first species, then, which we shall take up, is scrofula. But what is scrofula? It must be confessed that it is a disease more easily described than defined, and when confined to the lymphatic glands upon the external surface of the body, it is readily recognized by the most careless observers. Its true nature, however, and the varied forms which it may assume in the same or different individuals, have not yet been clearly elucidated, and yet there are few diseases more common or fearful in its ravages upon the human race. It is to these points we wish now to direct attention, and although we cannot promise much to our readers from our individual labours, our highest object shall have been attained if our remarks shall bring to the consideration of the subject more competent observers.

From the investigations which we have been able to make of this disease, we think we may define it as follows: a disease connected generally with a hereditary predisposition, depending upon some fault in the functions of the organs of nutrition, and resulting in the formation and deposition of a strumous or tuberculous matter in the various organs and tissues of the body.*

Whatever may have been the views of different writers upon the pathology of scrofula, there must be very few who can deny it, at times, a constitutional origin. Broussais himself, who was probably the most hardy and strenuous advocate of the inflammatory and local origin of all diseases, has said in relation to scrofula, or more properly the tumours arising from scrofula: "Ils sont plus gros chez les sujets prédisposés aux irritations du système lymphatique;"† and he admits this *predisposition* in many places in his great work entitled "*Examen des Doctrines Médicales*." Now, although we must not confound a simple predisposition with the disease itself, yet the predisposition being constitutional, the disease developed upon that predisposition must be constitutional also. Marjolin‡ has said of it that "it is a disease *totius substantiæ* of the body; no tissue or structure is exempt from its invasion;" and so constantly has it been found connected with a certain physical conformation, that many of our ablest authors have ascribed its origin in all cases to a general constitutional diathesis which they have called scrofulous. Such appears to have been the opinion of most of the older writers, together with Dr. Parr, Joseph Frank, Bayle, Armstrong, Andral, Laennec, Louis, Clark, Crichton, Lugol, Stokes, Barlow, and many others. But although this hereditary constitutional predisposition does exist, it by no means follows that scrofulous affections must necessarily be developed in every person so constituted, or that all

* Dr. Carswell supposes that "of all organs, and of all tissues, the mucous membrane is most especially the seat of this morbid production. Thus it is found in the mucous system of the respiratory, digestive, biliary, urinary and generative organs. It is also observed on the secreting surface of serous membranes, particularly the pleura and peritoneum, and in the cells of the cellular tissue: it often forms considerable accumulations in the lacteals and lymphatics, both before and after they unite to form their respective glands. It is also seen in the substance of the brain and cerebellum in accidental cellular tissue, and in the blood."—*Med. Chir. Rev.*, vol. xxii. p. 367.

† Propositions de Médecine, 169.

‡ *Med. Chir. Rev.*, vol. xxxv. p. 213.

persons not so constituted are necessarily *exempt*. This would, indeed, be running into the fatalism so much dreaded by Broussais.

Of the above characteristics of the disease, then, the most *important certainly* is the *formation and deposition of strumous or tuberculous matter*. Let us, therefore, consider its nature and its origin.

Dr. Rush* was of opinion that tubercles were nothing more than the natural mucus of the lungs which had become inspissated; but more modern observations have shown them to consist for the most part of a modified or vitiated form of albumen. "Ordinary tubercles," says Marshall Hall,† "contain about 98 parts of animal matter and 2 parts of saline matter; viz: the muriate of soda and the phosphate and carbonate of lime. In some cases they undergo a calculous transformation, and they then consist of 3 parts of animal matter and 97 parts of saline matters. This calculous transformation‡ is observed in the lungs, in the mesenteric glands, &c. It is opposed to softening."

Dr. Prout regarded scrofulous matter as "albumen imperfectly developed; Gendrin as a mass of albumen with excess of salts; Bredon considers it to be an albuminate of potash or soda. Boiling water and acids coagulate it when it has become somewhat softened."§ Boudet found, upon analysis, the following ingredients in tubercle: 1st, albumen; 2d, caseine; 3d, a substance presenting the characters of fibrine; 4th, a substance soluble in boiling alcohol (cerebric acid); 5th, oleic and margaric acids; 6th, saponified fat; 7th, lactic acid; 8th, lactate of soda; 9th, cholesterine. The ashes yielded chloride of sodium and sulphate of soda, together with phosphate and carbonate of lime and some silex and oxide of iron.¶ The following¶ is the mean of two analyses by Dr. Wright:—

1st, Fatty matter with oil globules	-	-	-	-	11.69
2d, Gelatin,	-	-	-	-	9.1
3d, { Phosphates Sulphates } Lime } Muriates } Soda }	-	-	-	-	6.85
4th, Carbonate of lime	-	-	-	-	a trace
5th, Oxide of iron	-	-	-	-	a trace
6th, Albuminous matter with fibrine	-	-	-	-	70.6

M. Thenard found, upon analysis, the following:—

1st, Animal matter (albuminous chiefly)	-	-	-	-	98.15
2d, { Muriate of soda Phosphate of lime } Carbonate of lime }	-	-	-	-	1.85
3d, Iron	-	-	-	-	a trace

* Med. Observations, vol. ii. p. 74.

† Hall's-Practice, p. 157.

‡ This calculous transformation of tubercles is a very interesting subject, and is, no doubt, similar to *mineral petrifications* where the organic are replaced by inorganic substances, and shows how completely a disease may change its character in the course of years. When this transformation or *petrification* takes place, we have a *calculous* in the place of a *tuberculous disease*, which we will notice under the head of *podagric or gouty types*; and we should by no means adopt the conclusions of Dr. Prout, that "the strumous, lithic acid and gouty diseases are all the results of mal-assimilation of the albuminous principle, and often gradually run into one another. The gouty chalk stones of old age may be considered as little more than modifications of the scrofulous tubercle of youth."—*Vide Am. Journ. Med. Sci.*, No. 12, N. S., p. 383.

§ Med. Chir. Rev., vol. i., p. 131.

¶ *Am. Journ. Med. Sci.*, N. S., No. 17, p. 187.

¶ *Ibid.*, N. S., No. 22, p. 454.

The chief organic constituents of tubercle, according to the analyses of M. Hasse* are—1st, fibrine; 2d, caseine; 3d, fat; with 4th, a small proportion of albumen. The inorganic compounds are—chloride of sodium, phosphate of soda, phosphate and carbonate of lime, oxide of iron, &c.

In relation to the chemical composition of tubercle Dr. Bennett† gives us the following summary and observations:—"In reviewing," says he, "the different analyses of tubercle which have now been given, we find—

"1. That tubercle consists of an animal matter mixed with certain earthy salts.

"2. That the relative proportion of these varies in different specimens of tubercle. That animal matter is most abundant in recent and earthy salts in chronic tubercle.

"3. That the animal matter certainly contains a large amount of albumen. Some chemists have also detected caseine, the existence of which is probable, others gelatin, the presence of which is more doubtful. The statement of Gueterboeck that it contains a peculiar animal matter (phymatine) has not been confirmed by other analysts. Fibrine and fat exist in small but variable proportion as a constituent of tubercle.

"4. The earthy salts are principally composed of the insoluble phosphate and carbonate of lime, with a small proportion of the soluble salts of soda. The statement of Boudet that cutaneous concretions are principally formed of the latter is directly opposed by other chemists, and is quite incompatible with their long persistence in the body.

"5. That very little difference in ultimate composition has yet been detected between recent tubercles and other so-called compounds of proteine."

Dr. Carswell‡ believes the chemical composition of tubercle to "vary at different periods in different animals and probably in different organs. In man it is chiefly composed of albumen with various proportions of gelatin and fibrin."

Broussais,§ in summing up the conclusions of pathological anatomists upon the nature of tubercle, says—"Les tubercules sont une matière opaque, d'un jaune pâle, qui, en l'état de crudité, a une consistance analogue à celle de l'*albumen* concrète, mais plus forte. Dans l'état de ramollissement, elle devient d'abord molle, friable, et acquiert par degrés une consistance et un aspect analogue à ceux du pus. On a désigné cette matière morbifique sous le nom de *matière scrofuleuse*, mais les tumeurs scrofuleuses, quoique de même nature, ont quelques caractères particuliers,|| qui en font une véritable variété des tubercules."

Recently considerable attention has been paid to the microscopic characters of tubercle. Breschet, who adopts the opinion of M. Kuhn in relation to the parasitical origin of tubercles, gave us several years ago the following microscopical appearances. "When you extract,"¶ says he, "with precaution, one of those small granulations of a gray colour which abound in the

* Am. Journ. Med. Sci., N. S., No. 24, p. 469.

† Ibid., p. 485, 486.

‡ Med. Chir. Rev. xxii., 369.

§ Examen des Doctrines, vol. iv., 118.

|| We are not aware in what this difference consists. According to the analyses of scrofulous matter by Prout, Gendrin and Bredon, as given us by Mr. Phillips in his late work on scrofula, and as quoted above, it is made up for the most part of albumen, like tubercle.

¶ Am. Journ. Med. Sci., No. 28, p. 487.

lungs of certain individuals, and are the origin of tubercles, and place it under the focus of the microscope, having lacerated it, you see that it is composed of other granulations still smaller; and the lacerated substance seems to be composed of an innumerable number of small albuminous globules, connected to one another by hyaline filaments, and the whole enveloped by a layer of mucus. Granulations, therefore, appear to be constituted by a filamentous apparatus, surrounded by globules in great number. The analogy is clear and striking between this structure and that of the mould which forms on paste, bread," &c.

The following* are some of the most important conclusions of an elaborate Memoir communicated to the Academy of Sciences on the microscopic anatomy of tubercles, by Dr. Lebert.

1. "The constant microscopic elements of tubercles are these:—a. Molecular granules. b. A hyaline interglobular substance. c. The proper corpuscles or globules of tuberculous matter. These globules contain a number of molecular granules, but no distinct nuclei. They are not affected by water, ether and the feeble acids; but they are dissolved by the strong acids as well as by ammonia and caustic potash.

2. "The opinion of certain pathologists that tuberculous deposit and its globules are only modifications of purulent matter, is contradicted by the result of microscopic inspection; the differences between them are strong and decided. The corpuscles of the latter are considerably larger, of a regular spherical shape, and contain from one to three nuclei; they are, moreover, usually free and isolated; whereas those of tuberculous matter are, especially in the crude state of tubercles, closely joined together. The globules of cancerous matter are twice or even four times as large, and they contain a nucleus in which again from one to three nucleoli are often observable.

3. "In sarcocele and also in scirrhus and encephaloid tumour of the mamma we not unfrequently find a yellowish cheesy-looking substance which much resembles genuine tuberculous matter: but a careful examination with the microscope clearly shows that it consists entirely of globules of cancer infiltrated with fat.

4. "When tubercles soften, their interglobular substance liquefies, the globules separate from each other, and may then, by absorbing a certain portion of the fluid, become larger; this change does not constitute an increased growth, but, on the contrary, the commencement of the process of decomposition.

5. "The pus, which is found blended with the softened tubercles, is supplied by the surrounding tissues, and is by no means the result of any transformation of the matter itself; but the pus, it must be confessed, quickly alters it and renders its elements much less easily recognizable.

6. "The globules of softened tubercles become ultimately dissolved in a granular fluid, and thus the ramollissement of their substance passes fairly to the state of diffuence.

7. "The cretaceous condition of tuberculous matter presents under the microscope the appearance of amorphous mineral granules, blended often with crystals of cholesterine and colouring matter. A part of the tuberculous globules is then removed by absorption, while the other portion remains for a long time in an unchanged condition.

8. "Occasionally we find in tuberculous deposit corpuscles of fat, melanosis, greenish-coloured globules and crystals which have the form of those

* Am. Journ. Med. Sci., Oct. 1844, p. 461.

of the ammoniaco-magnesian phosphate. Besides these admixtures we may find blended along with them the elements of inflammatory and suppurative action and various sorts of epithelial exudations; all of which tend to modify the essential microscopic features of the tubercles."

In a more recent work, (*Physiologie Pathologique*), M. Lebert gives the following as the constant elements of tubercle:—

1. "A great quantity of molecular granules perfectly round, having a diameter varying from $\frac{1}{1000}$ to $\frac{1}{800}$ of a line; 2, a hyaline substance rather consistent, and uniting together the preceding; 3, globules proper to tubercle. The latter constitute the peculiar characteristic of this morbid product, and are thus described: their form is rarely altogether round, although it is probable that, on their first deposition, they approach the spherical figure, and that they assume a less regular and often angular contour, as we see in so many other analogous instances, from their close juxtaposition; they are of a clear yellow colour and contain granules, but no distinct nucleus. These tuberculous globules vary considerably in their size, but without any definite relation to the age of the subject or to the organs in which they exist. After contrasting the globules in question with those of pus, cancer and encephaloid, M. Lebert thus expresses himself: 'Tubercle, then, contains in its crude state an element which is peculiar to it, and which distinguishes it from all other morbid productions.'"*

In regard to the origin or mode of production of tubercle three opinions, at least, have been entertained; the partisans of which have, in some instances, but too clearly shown the force of those prejudices which have been happily termed, by the author of the Inductive System, the "*Idola Tribus*." By some they have been supposed to have a parasitical origin, and to be nothing more nor less than true hydatids or acephalocysts, and *tuberculization* the result of the death or destruction of these animals. By others they are said to be the product of a kind of irritation or subacute inflammation of the tissues in which they are found. While, by a third party, they are believed to be formed in the blood by an error in the nutritive functions, and to be afterwards secreted into the different tissues and organs of the body. Let us examine these separate opinions.

M. Kuhn,† we believe, was the first to advocate the doctrine of their parasitical origin, in a paper read before the French Academy, in the year 1833. In this paper, he advances the opinion, that "they are to be considered as truly of an animal nature." The hydatids, by their irritation, cause cysts to be formed around them; these cysts become stronger, fibrous, or even cartilaginous; meanwhile the acephalocysts enlarge by serous imbibition, and multiply by buds from their inner surface; these again, in course of time, give rise to others, the whole nest being contained in one bag. From the inside of this bag is secreted a yellowish viscid matter which becomes thicker and thicker; M. Kuhn regards it as the primitive tuberculous deposit; it gradually solidifies, and with a simultaneous shrinking of the cyst, tends to squeeze and kill the enclosed animals, thus giving rise to a nucleus of tubercles."

In 1834, M. Breschet‡ read a paper before the Academy of Medicine, on "A New Theory of the Formation of Tubercles," in which he also advo-

* Med. Chir. Rev., Jan. 1846, p. 243.

† Med. Chir. Rev., July, 1833, p. 201. It is true that the term tubercle had been before applied to hydatidic tumours, but all tuberculous tumours were not considered hydatidic.

‡ Am. Journ. Med. Sci., Aug. 1834, p. 478.

cated their parasitical origin in accordance with the views of M. Kuhn. In the year 1836, Mr. Carmichael* read an "Essay on the Origin and Nature of Tuberculous and Cancerous Diseases," before the Medical Section of the British Association, in which he adopts the same view, and asserts that "tubercles are beings possessing a vitality independent of the animal in which they are lodged, except so far as that animal affords them; 1st, the organic particles of which they are formed; and 2d, the nutriment which they imbibe by their own innate powers, and thus they form the last link in the chain of the last class of animals, the *Entozoa*."

That hydatids are formed at times in the lungs, and other organs of the body, is a fact that cannot be denied, and it is highly probable, and indeed no less true, that they are formed under a similar predisposition, and identical *exciting causes*; but that they are the sole origin of tubercles, or that they are identical with tuberculous matter, we must either deny altogether, or dispute the statements of those whom we feel bound to consider as *good observers*. M. Louist† has detected hydatids in the brain of phthisical patients, and he has also met with one case of the kind in which they were found in the spinal marrow, and another in which they were found in the lungs; but although he regarded them as being intimately connected with tubercles, they could not be confounded with them. Andral has also met with hydatids in the human body, but not more than four or five times in 6000 cases.

The next opinion in relation to the origin of tubercle, is that which refers it to the action of inflammation or irritation, which, according to the physiological doctrine, is the first degree or stage of inflammation. Broussais, it is well known, has contended most strenuously for this doctrine. The fourth volume of his "*Examen des Doctrines Médicales*," is almost entirely devoted to this subject, and affords us a fine specimen of his great ability as a writer. His argument seems to be principally founded on the two following facts: viz., first, that he had never seen, out of a great many subjects, in the French army, any one with tubercles in the lungs, who did not trace the disease to an "*impression of cold producing catarrhs, pneumonia or pleurisy, or some other cause which had irritated the lungs*," as concussion from falls, moral affections, the use of alcoholic drinks, and other excitants of the gastric passages, forced marches or other excesses which had accumulated the blood in the tissue of the lungs;" and secondly, that he had found that although "spare and feeble persons with long necks, contracted narrow chests, small limbs, fine and transparent skin, light hair, &c., become much more readily tuberculous and phthisical than men of dark skin, expansive chests, and well developed muscles, yet all men may become victims of tubercular phthisis," if exposed to the proper exciting causes.

This opinion of course has had a great many advocates, and has recently been adopted by Bennett, Evans, and Sibson, and is the only one which can satisfy the minds of the solidists or vitalists in medicine, but it appears to me that it can be successfully opposed not only by *à priori* considera-

* Am. Journ. Med. Sci., Feb. 1837, p. 532. The same doctrine is also adopted by Dr. Baron, in his work on "*Tuberculous Affections*," and by Dupuy in his "*Traité de l'Affecton Tuberculeuse*." Vide Louis on Phthisis, Boston, 1836, p. 144.

† (Louis on Phthisis, p. 143.) We have never seen a case of hydatids in man. In hogs, however, they are very common, and are known as *measles*. They are not properly acephalocysts as the hydatids in man are said to be, for they possess a head as well as a body, and are called by Cuvier "*Cysticercus Cellulosus*." It is observed, that hogs that are allowed to go at large never have them.

tions, but by facts which cannot bear such a mode of interpretation. Although we are not entirely satisfied with the entire train of reasoning in the following extract, we beg leave to give it as containing a pretty complete refutation of the inflammatory origin of tubercle. "The doctrine of the inflammatory origin of tubercle has always appeared to us untenable; for setting aside the objections arising out of the relative topographical statistics of this product, and those of inflammation as established by Louis, there are others to be adduced which it is equally difficult to reconcile with the doctrine. Tubercle undoubtedly exists as such in the blood; it must, therefore, either co-exist with the fibrine or be supplementary of it. The latter supposition is entirely negated by the researches of Andral and Gavarret, which demonstrate that the blood of phthisical patients contains more than that in any other disease, the pure phlegmasiæ excepted. We must, therefore, admit their co-existence in the blood. This being granted, the question of the origin of tubercle, so far as inflammation is concerned, is reduced within very narrow limits. Either the same vital action, that is, inflammation existing in capillary vessels which are separated from each other by inappreciable distances, is capable of giving rise at the same time to two totally different products, namely, tubercle and fibrine, or we must conclude that these products originate in a different vascular action. In other words, we must believe, if we hold the inflammatory theory, that the tubercular deposition, and the chronic induration in its immediate vicinity, the latter a pure fibrinous exudation, are the result of the same action in contiguous capillary branches. Now although we do not maintain that it is impossible, we must yet hold that it is improbable that where the blood, holding both the fibrine and tubercular matter in solution, arrives at the side of two given capillaries—one supplying one cell—the other the next—these vessels should be capable of exercising a kind of elective affinity; and one under inflammation allow the exudation of tubercle—the other of the true blood plasma. The difficulty is only to be avoided upon the supposition, that, of these two processes, namely, tuberculization and pneumonic exudation, going on as they assuredly do at the same time, the latter alone is inflammatory, the other is the product of some other kind of vascular action, most probably that which in healthy subjects is subservient to normal nutrition."*

But facts are also at variance with this opinion. "Microscopic examination most decidedly exposes the fallacy of the opinion that the gray granulation is the product or effect of inflammatory action." M. Rainey† has observed that the "comparatively healthy appearance of the capillaries surrounding a mass of tubercle, in reference to the tortuous and unequally dilated state of vessels going to parts in which fibrine is deposited as the result of inflammation, is subversive of the doctrine which attributes the deposit of tubercle to that process." But again, I myself have opened and examined the body of an infant a few weeks old, whose mother had just died from pulmonary consumption, in whom I found the lungs and spleen studded with granulations which seemed to have been inherited from its parent without previous disease—and Dr. Armstrong‡ says, "on examining the bodies of young children, I have sometimes found tubercles or the germs of tubercles in the lungs, where no sign of pectoral disease had previously existed; and I have met with them likewise in adult lungs where there had been no sufficient grounds for suspecting them during life.

* Ranking's Abstract, vol. i. p. 210.

† Am. Journ. Med. Sci., Oct. 1846, p. 469.

‡ Medical Works, p. 439.

Such occurrences have led me to suppose, that tubercles may sometimes be congenital, and that at other times they are the slow and unsuspected products of later periods."

Facts like these have necessarily led to the adoption of the opinion that tubercles are formed in the blood by a defective action of the organs of nutrition, or mal-assimilation, and that they are secreted into the tissues in which they may be found without previous inflammation. This seems to be the view taken of the matter by Bayle,* Laennec,† Louis,‡ Morton,§ Lebert,|| and Nicolucci, and many others, and has been confirmed by the anatomical researches of Dr. Carswell. "While the miliary tubercles are considered by M. Andral as the pulmonary vesicles rendered hard by chronic inflammation, others following Dr. Carswell continue to attribute them to a secretion from the blood,¶ not of tubercular matter alone, but also of a portion of its albuminous fluid forming a transparent matrix or cyst for the more solid deposit. Dr. Watts seems to hold the modified view of tubercles being of an intermediate nature between pus and coagulable lymph, first solidifying, then softening. That tubercles are the pure result of inflammation is now rarely entertained; but the more modern phraseology is, that they are a perversion of the ordinary process of nutrition, and that the existence of the *scrofulous diathesis*, occasions that to be deposited as inorganizable albumen, which, in the sound state, would have taken on the form of organized fibrine."**

Dr. Wright†† thus expresses himself in relation to the formation of tubercle. "Tubercular matter," says he, "may be found either in the blood-vessels, or externally to them. But, wherever tubercle is produced, the blood itself is essentially the source of it. In those cases, numerous enough, in which tubercle is discharged abundantly, and in a state of complete maturation from the mucous membrane of trachea or bronchi or bowels, without any lesion of these parts, such matter must have been formed, and matured in the circulating system, whence it was eliminated as a foreign body by the most eligible outlet."

The following remarks of Dr. Carpenter‡‡ upon this subject, are so just that, although the extract is long, I beg leave to give them *entire*, as embodying our own views:—"In persons of that peculiar constitution which is termed *scrofulous* or *strumous*, we find an imperfectly organizable or *cacoplastic* deposit, or even an altogether *aplastic* product, known by the designation of *tubercular matter*, frequently taking the place of the normal elements of tissue, both in the ordinary process of nutrition, and still more when inflammation is set up. From an examination of the blood of tuberculous subjects, it appears that the fibrinous element is not deficient in amount, but that it is not duly elaborated; so that the coagulum is loose and the red corpuscles are found to bear an abnormally low proportion to it. We can understand, therefore, that such a constant deficiency in the plasticity, must affect the ordinary nutritive process; and, there will be a liability to the deposit of *cacoplastic* products without inflammation, instead

* Examen des Doct. Med., tome quatrième, pp. 152, 212.

† Treatise on Diseases of the Chest.

‡ Researches on Phthisis.

§ Illustrations of Pulmonary Consumption.

|| Ranking's Abstract.

¶ Magendie once detected tuberculous matter between the columnæ carneæ of the right ventricle of the heart of an individual, who had died of consumption.--Legons sur le Sang, pp. 11, 12.

** Am. Journ. Med. Sci., April, 1844, p. 447.

†† Ibid., 1846, p. 451.

‡‡ Principles of Human Physiology, pp. 462, 463.

of the normal elements of tissue. Such appears to be the history of the formation of tubercles in the lungs, and other organs when it occurs as a kind of metamorphosis of the ordinary nutritive process; and in this manner it may proceed insidiously for a long period, so that a large part of the tissue of the lungs shall be replaced by an amorphous deposit, without any other ostensible sign than an increasing difficulty in respiration. It is in the different forms of tubercular deposit, that we see the gradation most strikingly displayed between the plastic and aplastic formations. In the semi-transparent, miliary, gray and tough yellow forms of tubercle, we find traces of organization in the form of cells and fibres more or less obvious; these being sometimes almost as perfectly formed as those of plastic lymph, at least on the superficial part of the deposit, which is in immediate relation with the living structures around, and sometimes so degenerated as scarcely to be distinguishable. In no instances do such deposits ever undergo further organization, and, therefore, they must be regarded as cacoplastic. But in the opaque, crude, and yellow tubercle, we do not find even these traces of definite structure; for the matter of which it consists, is altogether granular, more resembling that which we find in an albuminous coagulum. The larger the proportion of this kind of matter in a tuberculous deposit, the more is it prone to soften whilst the semi-organized tubercle has more tendency to contraction. This is entirely aplastic. Now, although tubercular matter may be slowly and insidiously deposited by a kind of degradation of the ordinary nutritive process, yet it cannot be doubted that inflammation has a great tendency to favour it; so that a larger quantity may be produced in the lungs after a pneumonia has existed for a day or two, than it would have required years to generate in the previous mode. But the character of the deposit still remains the same; and its relations to the plastic elements of the blood, are shown by the interesting fact, of no unfrequent occurrence, that in a pneumonia affecting a tuberculous subject, plastic lymph is thrown out in one part whilst tuberculous matter is deposited in another. Now inflammation, producing a rapid deposition of tubercular matter, is peculiarly liable to arise in organs which have been previously affected with chronic tubercular deposits by an impairment of the process of textural nutrition; for these deposits acting like foreign bodies, may of themselves become sources of irritation; and the perversion of the structure and functions of the part renders it peculiarly susceptible of the influence of external morbid causes. These views, at which several recent physiologists and pathologists have arrived on independent grounds, seem to reconcile or supercede all the discordant opinions which have been upheld at different times regarding the nature of tubercle; and lead to the soundest views with respect to the treatment of the diathesis."

Having now explained as far as we have been able, the nature and origin of tubercle or strumous matter, which we believe identical, we lay down the following proposition; that, namely, in whatever part of the system this matter may be found deposited, however variant may be the symptoms produced from the functions disturbed, the diseases by which this deposit was effected, are invariably the same, or, in other words, are isopathic in their nature. This proposition is fully established if the law, which we have already laid down, be admitted to be true, namely, that "diseases which result in products, or deposits which are both isomorphic and isomeric, must be considered as isopathic, no matter how they may differ in their seats and symptoms." The same law has been expressed

in different language by M. Lebert.* “In the molecular composition of morbid products,” says he, “everything which is really and materially different in pathology, shows this difference in the ultimate elements appreciable by sight, that is, in the microscopic structure.” Now, if the chemical and microscopic elements of tubercle are found to be the same in whatsoever part of the body it may be deposited, why should the diseases which produced it be considered different? But we are very glad to have the following high authorities in favour of our proposition. Dr. Gerhardt† has declared that “all the forms of disease characterized under the term tuberculous, resemble each other in their anatomical lesions, which consist in a deposit of tuberculous matter. The variety in the symptoms of tuberculous diseases arises partly from the difference in the *structure of the organs* affected, and partly from the degree of inflammation which may accompany their formation. The functions of an organ are usually disordered where it becomes the seat of tubercle; and hence every local disease which is accompanied by a secretion of this substance, offers the compound symptoms of the general tuberculous disorder, and of the local lesion. Where the local symptoms predominate, the general character of the tuberculous disease is lost sight of, and the affection is regarded as an ordinary inflammation. Thus most cases of tuberculous peritonitis and meningitis are even now considered as simple inflammatory affections. In the lungs, the local signs are much less intense, so that time is allowed for the development of the symptoms of the general disease, and pulmonary phthisis is looked upon in the light of a mere chronic phlegmasia. It is this moderate development of the local signs, which has caused the true nature of pulmonary consumption to be much better understood than that of many analogous diseases.” “We must, therefore, remember that as phthisis constitutes only *one* of the numerous forms of tuberculous diseases, we should be careful to avoid isolating it from the *numerous kindred affections* occurring in the lymphatic glands, the serous or mucous membranes.” And even still more in point are the following remarks of Rilliet and Barthez,‡ in their work on the Diseases of Children. “Tuberculization,” say they, “is the deposition in organs of an accidental production, without analogy in the economy, to which the name of tubercle has been given. It is common to meet with this foreign body simultaneously in several organs, and whichever be that in which it is deposited, its nature, its evolution, and the greatest part of the phenomena it gives rise to, *are the same*. The different species of tuberculization, then, should, just as dropsies or phlegmasiæ, be considered *as identical affections*, whose differences principally result from the seat and functions of the organs they have invaded. Tubercle exerts on every tissue the same local action; thus, very frequently, occasioning the development of a secondary inflammation of which the frequency and characters vary according to the nature of the organ affected. The tubercular phlegmasiæ form a group just as well marked as do the simple phlegmasiæ. The general pathological effects which tubercle causes, being only influenced in an indirect manner by the organs affected, present an *almost perfect identity* in all the species (varieties) of tuberculization. The most common of these effects is a general wasting, a consumption, to which the name of phthisis has been given.”

* Med. Chir. Rev., Jan. 1846, p. 242.

† Am. Journ. Med. Sci., Feb. 1838, pp. 368, 369.

‡ Vide Review of the Work, in Med. Chir. Rev., Oct. 1845, p. 406, *et seq.*

We now proceed to take up in order, those diseases belonging to this type or species which are isopathic the one with the other. The prototype of these diseases must, of course, be the struma vulgaris or common scrofula, of which we have already given a definition. It is a disease, which was well known to the ancients, being denominated *χορπας*, by the Greeks, and struma by the Latin authors; and the faithfulness of the following description by Celsus,* will be recognized by all:—"Struma quoque est tumor in quo subter conereta quædam, ex pure et sanguine glandulæ oriuntur; quæ vel præcipue fatigare medicos solent; quoniam et febres movent nec unquam facile maturescunt; et sive ferro sive medicamentis curantur plerumque iterum juxta cicatrices ipsas resurgunt; multo post medicamenta sæpius; quibus id quoque accedit quod longo spatio detinent. Nascuntur maxime in cervice; sed etiam in alis et inquinibus, et in lateribus—in mammis quoque feminarum se reperisse, Meges auctor est." We need give no further description of it—and the first disease which we shall mention as isopathic with it, is hydrocephalus, or probably more correctly "tubercular meningitis."

This disease, like many others, had long been ascribed to the vague and uncertain pathogeny of inflammation of the brain or its meninges, either acute or chronic.

In the February and May numbers of the *American Journal of Medical Sciences*, for the year 1834, and the November number for 1835, Dr. Gerhard has detailed a number of cases of cerebral diseases, and his analysis has led him to "suspect a fact which will be presently," says he, "more fully developed, that is, the close connection, if not *identity* of one form of cerebral disease with the tuberculous affections;" and again, he says, "the most important fact to which this series of observations has led, is the proof of the connection of the cases included in the first class with the tuberculous affections. It was long since remarked that many children who had died of a cerebral disease, were of a scrofulous temperament, but it was impossible either to confirm this remark, or to point out the cases to which it should be limited, without the aid of pathological anatomy." Subsequent reflection seems to have changed the suspicion into a certainty in his mind, for in the February number of the same Journal, for the year 1838, he holds this strong and decided language:† "If there be any disease which, from its frequent occurrence and fatal termination, causes the despair both of physician and patient, that disease is the tuberculous affection. *Whether we designate it as pulmonary phthisis, meningitis of children, chronic peritonitis or scrofula, the radical disorder is the same, and presents similar anatomical characters.*"

Dr. Hennis Green,‡ who was among the first writers to call the attention of medical men to the frequency of coincidence of the disease with the deposition of tubercular matter upon the meninges of the brain, in a paper on this subject, published in the *Medico-Chirurgical Transactions* (1842), has given a table containing the name, age, sex, symptoms and lesions, of 30 children, who died from or with tubercles of the brain. Nine of the children died with symptoms closely resembling those of acute hydrocephalus; a few with symptoms of softening of the brain, the rest of consumption, small-pox, &c. In enumerating the symptoms attendant on

* *Medicina*, p. 262.

† *Am. Journ. Med. Sci.*, Feb. 1838, p. 368.

‡ *Med. Chir. Transactions*, vol. xxv., and *Amer. Journ. Med. Sci.*, April, 1843, pp. 461-4.

the deposition of tubercle in the brain, he observes, "In most cases it (that is, the acute stage) consists in a succession of symptoms of an irregular character, and more or less allied to those of acute hydrocephalus, or softening of the brain. Thus the acute stage of cerebral tubercle may commence as the third stage of acute hydrocephalus, or the symptoms of the different periods of this latter disease may run rapidly into, and be mixed up with each other;" and again, "the irregularity of the symptoms which occur in the acute stage of cerebral tubercle, is, I conceive, a very important point in the history of cerebral disease among children. Authors frequently mention the occurrence of anomalous cases of hydrocephalus, of cases in which the first stage of the disease was wanting. Is it not probable, from what has been said, that many of these hitherto unexplained anomalies depend on the complication of acute hydrocephalus with cerebral tubercle, or, to speak more correctly, on the fact that the acute stage of cerebral tubercle generally consists in irregular hydrocephalic symptoms?"

Dr. Green observed, in the Children's Hospital at Paris, 60 cases of hydrocephalus, in 56 of which tuberculous matter was deposited in the inflamed pia mater. MM. Rilliet and Barthez found the same in 29 out of 33 cases, and M. Bouchut in 6 out of 9 cases. "The intimate connection of the disease," says the *Med. Chir. Rev.*, "with the strumous diathesis has been long observed. The observations of English, German, and French writers, but especially the latter, all tend to show the rarity of the occurrence of hydrocephalus, without tuberculization of some one or more organs of the economy. In the vast majority of cases, it is the strumous, and far less manageable form of inflammatory action which prevails."

Dr. Good* has said of the disease that "it is often connected with a scrofulous habit, and has sometimes formed a fatal metastasis to consumption." Dr. Green† says, "in children the tubercular matter is widely diffused, and has implicated many important viscera; in the brain it may excite hydrocephalus or meningitis; under the serous membrane of the chest, pleurisy; in the abdomen, peritonitis; in the intestines, tubercular ulceration. These complications rapidly undermine the resisting power of the little patient; diarrhœa sets in and death ensues long before the period at which a fatal termination takes place in the adult." Dr. Evans‡ says: "The study of this species of meningitis is the more worthy of engaging the attention of the pathologist, from the fact that this affection, like chronic peritonitis, often attacks subjects in whom the tubercular affection of the lungs has not yet made great advance—in other words, subjects who may have survived a long time had not the meningitis become implicated in the disease." Dr. Hamernik, in a late paper on Tubercular Meningitis, of which an abstract is given in the January number of the *Am. Journ. Med. Sci.*, makes the following remarks touching the connection of scrofula and this form of meningitis:—"When a child," says he, "which has for some time appeared to lose flesh, and especially if he have previously had *scrofulous enlargement of the glands*, becomes the subject of pains in the head, we must be on our guard; but other symptoms portend the appearance of tubercular meningitis; in the case of robust children headache is not of so serious import, as it may arise in them from many other causes. Convulsions, tossing of the head about the head, and screaming are not specially connected with the tubercular affection, as any kind of exudation at the base of the brain may give rise to the same symp-

* Study of Medicine, vol. ii. p. 402.

† Med. Chir. Trans., vol. xxvii. p. 358.

‡ Med. Chir. Rev., April, 1845, p. 404.

toms; but it is to be remembered that in nineteen out of twenty cases *deposition in this spot is of a tuberculous nature.*" Dr. Bennett,* in his work on Acute Hydrocephalus, has especially directed attention to *scrofula* as a predisposing cause of the disease, and among the morbid appearances presented after death, he mentions a "yellowish gelatinous substance frequently containing caseous deposit, and intermediate in texture between fibrine and tuberculous matter." "In other cases *decided* tuberculous matter is deposited in layers or patches varying in size and consistence; or, again, as solid masses imbedded in the substance of the brain. Again, granules or miliary tubercles may be observed singly or in groups, situated on the pia mater." We need pursue this topic no further, as we feel convinced that it is now very generally admitted that there is a form of hydrocephalus isopathic with scrofula.

We pass on to the consideration of another and probably the most frequent modification of scrofula. We allude to that form of pulmonary consumption now very commonly known as tubercular phthisis. Bayle, it is well known, divided phthisis into six different species, *a tuberculous, a granulated, a cancerous, a melanotic, a calculous, and an ulcerous*, while, on the other hand, Laennec and Louis have admitted but one species, the *tuberculous*. Now it is true that the application of terms is in a good degree arbitrary, and their use, either in a contracted or expanded sense, cannot be productive of confusion so long as the writers make themselves clearly understood; yet we think there has been fault on both sides in the above use of the word phthisis. Bayle has made too many, and Laennec too few, species of the disease. Bayle was evidently deceived in considering granulations as different from tubercles, and hence his first two species become merged into one; so also, melanosis being in the view of Laennec a soft cancer, his *cancerous, melanotic and ulcerous* would become *one and the same*, and he would then have but three species. He has, however, omitted a most important species of phthisis to which we alluded under our head of purulent types, namely, the *apostematous*. Neither Bayle nor Laennec makes any mention of this last, and yet it seems to us to be as clearly marked a species of disease as was ever presented to the consideration of the mind. Laennec and Louis are also wrong in confining the appellation to the *tuberculous* alone, inasmuch as the same general symptoms may arise from a disease affecting the same organs, yet having very different anatomical characters.

As already stated in our last paper, we think the term has been applied to at least three distinct species of disease—these are, the *apostematous*, the *tubercular*, and the *cancerous* or *carcinomatous*, and we will add a fourth,‡

* Med. Chir. Rev., April, 1843, p. 332.

† This disease may exist, to all intents and purposes, *without the effusion of water*; the patient dying before that event takes place. The effusion of water, constituting the various forms of dropsy, is a secondary and not a primary element of the disease, or, as Heberden has expressed it, "*Hydrops non tam ipse morbus est quam alicujus morbi signum*," and seems to depend upon three different proximate causes, viz.: 1st, mechanical obstruction by pressure upon the vessels. 2d. That peculiar state of the blood known as *aquosity*, where the watery parts are positively increased, forming idiopathic dropsy, belonging to our head of hydropic types, and 3d, the passage out of the blood of an undue portion of its *albumen*. *There may be a chronic form of this disease arising entirely from hydatids.*

‡ I am under the impression that there is another form of consumption or phthisis which is specifically distinct from either of the above, and properly belongs to our species of marsh or intermittent fever. This form is known among writers as catarrhal phthisis or chronic bronchitis, and its true pathology seems to me to consist in

the *calculous* of M. Bayle, which we will again notice under the head of gouty or podagric types. We intend to treat in this place of the disease described by Louis and Laennec, namely, the *tubercular*,* and of *that alone*. This is the form of pulmonary consumption which we regard as being entirely isopathic with the scrofulous affection or common scrofula. Broussais† was well convinced that Laennec and Louis were wrong in attributing phthisis in all cases to tuberculosis of the lungs, and assures us that he has seen many cases of the disease in which no tubercles could be detected after death. This was, no doubt, true, and we have before mentioned the observation of De Haen, that he had examined cases after death from phthisis, in which he could not detect the point in the lungs whence proceeded the purulent discharge; but all this apparent confusion vanishes when we remember that both these observers were speaking of a disease specifically distinct from the one we are now considering. They were speaking of the apostematous or purulent consumption, while Laennec and Louis were confining themselves to the tubercular. Here, then, is one example of the confusion among medical writers arising from their not recognizing the law of the isopathism or parallelism of diseases: from not considering a fact long ago taught by Sydenham,‡ that “diseases may come under the same genus, bear the *same name*, and have some symptoms in common, which, notwithstanding being of a different nature, require a different treatment.”

Having now clearly defined the disease of which we are speaking, I proceed to the *proof of its identity with scrofula*. This identity, I know, has been denied by some able writers, and very recently by such men as Evans,§ Beer, Lebert, Phillips,|| Albers, Mackenzie,¶ and our own distinguished countryman, Dr. Chapman;** but I cannot help believing that

a transfer of the perspiratory or urinary excretions, from want of action in these emunctories, to the mucous membrane of the lungs, forming a false crisis, and should come under our notice of the critical symptoms of that fever. This was evidently the opinion of Dr. McCulloch, and it can readily be perceived how this continued overtasking of the lungs with the elimination of the watery particles of the blood, may produce an irritation that would lead to emaciation, cough, and the expectoration of *mucopurulent* or *puriform* matter. If this opinion be well founded, then it would follow that one form of phthisis would prevail in malarious regions, which, instead of being antagonistic, would be isopathic with the fevers of such districts, whereas it might be still true, that the tubercular form would be more confined to higher and colder latitudes, and might not be the most usual form met with in those places where intermittents prevail. In the discussions, therefore, upon the antagonism of marsh fever and phthisis, care should always be had to *ascertain the peculiar species of both diseases*.

* The existence of tubercles in the lungs is the cause and constitutes the special character of phthisis.

† M. Broussais, after quoting the remark of M. Louis, borrowed from Laennec, that “l’existence des tubercules dans les poumons est le cause et constitue le caractère propre de la phthisie,” has the following declaration:—“Nous déclarons d’abord cette proposition fautive, en affirmant que nous avons rencontré plusieurs fois et notamment dans cet hiver de 1832, des exemples de consommation par phlegmasie chronique et fonte purulente des poumons, dans lesquelles il n’y avait pas le plus légère trace des tubercules, en prenant ce mot dans le sens rigoureux que lui donne M. Louis. Voilà donc une première loi qui se trouve fautive. Comme nous avons vu cela, nous sommes certain que d’autres le vérifieront, et nous voilà tranquille.”—Examen des Doct. Med., tom. quat. p. 336.

‡ Preface to Wallis’ edition of the “Works of Thos. Sydenham,” p. 25.—(Anno. 1788. London.)

§ Lectures on Pulmonary Phthisis.

|| Scrofula, its nature, causes, &c.

¶ Ranking’s Abstract, i. p. 73.

** Lectures on the more important Dis-

eases of the Thoracic and Abdominal Viscera.

we have, on the other side of the question, the weight of authority and of facts. In the first place the isomorphic and isomeric characters of tuberculous and scrofulous matter prove their identity. We have already seen that Prout, Gendrin and Bredon have given the chief ingredient in scrofulous matter as albumen; this is the chief ingredient in tubercle. Mr. Gulliver* says, that "crude tubercular matter, from *whatever organ obtained*, differs as little in its microscopical as in its general and chemical characters. The drawing shows how nearly the microscopical elements composing crude tubercles of the *lungs* and of the *lymphatic glands* agree." Dr. Good† says, "the untempered fluid contained in the tubercles resembles that of scrofula, and more especially as this variety of consumption is very generally found in constitutions distinctly scrofulous, the analogy between the two is extremely close, and has often led to a similar mode of treatment." Laennec‡ says, the "tubercles in the lungs differ *in no respect from those* situated in the glands; and which, under the name of scrofula, after being softened and evacuated, are followed by a perfect cure." Dr. Duncan§ regards tubercles "as lymphatic glands in a particularly diseased state; that such diseased state is the consequence of scrofula; and that *tubercular phthisis may, in every instance, be regarded as scrofula affecting the lungs.*" This is also the opinion of Dr. Parr, who ascribes consumption to an ulcer in the lungs, which, proceeded from the suppuration of a strumous gland, which we know," says he, "heals with peculiar difficulty." Bayle|| insisted on the scrofulous origin of tubercles.—I have myself observed (and I would ask who has not?) scrofulous enlargement of the lymphatic glands to be suddenly replaced by fatal and rapid pulmonary phthisis—thus proving their mutual *convertibility*. This has been repeatedly noticed by Lugol, whose experience and observations upon this point are so full and conclusive, that we will sum up all we have to say in the following pertinent extract:—Lugol¶ says, "The identity of scrofula and pulmonary tubercles is, in our opinion, *most manifest*; they have both an hereditary origin, and are equally general and fatal in the affected family. The two latter characters, which belong to each of these diseases in an equal degree, are in themselves sufficient to establish their identity; but we shall endeavour to render the fact still more evident by demonstrating, first, that scrofula has frequently a tubercular origin; secondly, that the two diseases ordinarily co-exist in the same family; and thirdly, that all scrofulous subjects have tubercles in the lungs.

"1st. More than half the subjects of scrofula have consumptive progenitors. Scrofulous diseases of all kinds invade a family without the operation of any other cause than the existence of pulmonary tubercles in one of the parents. So general is this fact, that in a ward containing 84 beds, we have constantly ascertained the existence of consumption in one or other of the parents of more than half the patients; and even this is below the real proportion, for a great many patients are utterly ignorant of the sanitary condition of their families, and in other cases the presence of consumption has been overlooked, because it was not accompanied by its more manifest signs.

"2d. The preceding observations are still further justified by the frequent coincidence of scrofulous diseases and pulmonary consumption in

* Med. Chir. Rev., July, 1846, p. 131. † Study of Med., vol. iii. p. 273.

‡ De l'Auscultation Mediate.

§ Am. Journ. of Med. Sci., No. 32, p. 388.

|| Examen des Doctrines Médicale, tome quat., p. 152.

¶ Ranking's Abstract, vol. i. p. 73.

the same family. (And here the author gives cases in confirmation.) In scrofulous families, children often perish from disease in the lungs; and again in consumptive families some of the members are carried off by various forms of scrofulous disease.

"3d. Scrofulous, in the ordinary sense of that word—that is, children who are regarded as scrofulous, and not tuberculous—are, nevertheless, as much the subjects of this deposit as those in whom tubercle has concentrated itself in the respiratory organs. *The natural death of the scrofulous is by consumption*; we might say, indeed, that they seldom die in any other way, for in all forms of scrofula, death rarely takes place until after the invasion of the lungs by tubercular deposit." To the same purport we might cite the opinions of others* upon the subject, but we deem it needless; enough has been said to prove the identity of the two diseases.

The next disease which we shall consider as isopathic with scrofula, is "*tabes mesenterica*." Marasmus has long been regarded as a scrofulous affection, inasmuch as it generally occurs in the children of scrofulous parents, and although denied by some, there can be no doubt of the fact, that in this disease the deposit of scrofulous matter into the lymphatic glands under the skin, is replaced by a similar deposit into the mesenteric glands. Dr. Good† has given the disease the name of *MARASMUS TABES STRUMOSA*, indicating his belief in its scrofulous origin. Dr. Marshall Hall‡ has arranged it along with tubercular meningitis and pulmonary consumption, as alike the product of scrofula. Dr. Dickson§ remarks upon this point, "Gregory was the first, I think, to recognize the cause with distinctness. It would be well if we could agree with him to employ the phrase in a limited sense to designate this infantile complaint as consisting in a primary scrofulous affection of the peritoneum and mesentery, with consequent disorder of the alimentary canal in all its extent;" and again, "It shows itself in an infinite majority of cases in the children of scrofulous parents; or, where the parents have not exhibited any specific form of scrofulous disease, under circumstances in which they and their offspring are obviously exposed to the influence of the agents formerly spoken of as fostering the production and development of scrofula."

The reviewer|| of Gibert's work on pulmonary consumption has made the following remarks upon this point, which we will give entire. He says: "These seeds (that is, of unorganizable matter) are generally known by the name of tubercular matter, and when deposited in the lungs in separate masses, they are termed tubercles, and the resulting disease is denominated consumption of the lungs. It may, however, be here observed, that where tubercular or unorganizable matter becomes deposited in any of the lymphatic glands or in the joints, the disease is termed scrofula. If, on the other hand, it is arrested in its passage through the mesenteric glands, then the name of *tabes mesenterica* is employed to distinguish it. It must, therefore, appear obvious that these three diseases *are all radically one and the same*, depending entirely on the presence of unorganizable matter, and *differing only in locality*."

* Whilst these sheets are passing through the press, I have received a notice of a work "On the Pathology and Treatment of Scrofula," by Dr. Glover, from which it appears that the author is a believer in the identity of scrofula and tubercle, and I beg leave to refer my readers to this work for further confirmation of the views above set forth. See also notice of it in the preceding number of this Journal, pp. 167-177.

† Study of Med., iii. p. 234.

§ Essays on Pathology, i. 576.

‡ Practice of Med., p. 172.

|| Med. Chir. Rev., July, 1842, pp. 46-47.

When the tuberculous matter is deposited on the peritoneum, the disease is known as tubercular peritonitis. M. Louis* considers every case of chronic peritonitis, when not dependent upon the acute, as being tuberculous. Drs. Henry Marsh† and Fleetwood Churchill have both published communications in the *Dublin Journal of Medical Science*, on a form of peritonitis occurring in strumous individuals, to which they have given the title of strumous peritonitis, and they say that "strumous inflammation of the peritoneum with effusion may present itself either as an acute or chronic disease: the latter, which is the more frequent form, may be an evident consequence of the former, or, it may occur without our being able to recognize any preceding acute stage, coming on so gradually in fact, that the nature of the complaint may not be discovered until it is fully developed." The appearances which they describe as being presented after death, are "more or less effusion into the peritoneal cavity, with shreds of floating lymph therein. The intestines are agglutinated together and sometimes to the peritoneum, which membrane is occasionally thickened and partially injected, and sometimes studded with *miliary tubercles*, or has tubercular matter deposited on it. The mesenteric glands may be healthy, or they may be enlarged and contain tubercular matter."

The effusion alluded to above, would, of course, give rise to a form of ascites which, as in the case of tubercular meningitis, would not change the nature of the disease, as this would be but another link added to the results of one and the same morbid action. We pass on to the consideration of another isopathic form of this species of disease.

The form of disease to which we allude is an affection of the urinary organs, known as albuminuria, and by many supposed to depend upon a certain state of the kidneys, which has been called morbus Brightii. In this disease the urine is found to be coagulable by heat and nitric acid, showing the existence in it of a large quantity of *albumen*. Dr. Bright, to whom we are chiefly indebted for a knowledge of this disease, has described the appearances of the kidneys after death as of three different kinds. "In the first, the kidney loses its usual firmness, and becomes of a yellow mottled appearance externally; the size is not materially altered. In the second, the whole cortical part is converted into a granulated texture, and there appears to be a copious morbid interstitial deposit of an opaque white substance; the kidney is rather larger than natural. In the third, the kidney is rough and scabrous externally, and rises in numerous projections not much exceeding a large pin's head, yellow, red and purplish; it is hard, and inclined to be lobulated, and its texture approaches to a semi-cartilaginous firmness; there appears, in short, a contraction of every part of the organ, with less interstitial deposit than in the last variety." Dr. Christison has styled "the disease '*granular degeneration of the kidneys*,' M. Rayer '*albuminous nephritis*,' while M. Solon terms the primary disease '*albuminuria*.'"

In the 29th volume of the *Medico-Chirurgical Transactions*, there are no less than three separate articles devoted to the consideration of this disease—one by Dr. Johnson, another by Mr. George Busk, and a third by Mr. Joseph Toynbee. Dr. Johnson advances the opinion that the disease depends essentially upon a fatty degeneration of the kidneys, similar to that which takes place in the liver, or to an "excessive increase of

* Hall's Practice, 573. Note by Eds.

† Am. Journ. Med. Sci., July, 1843, p. 206, *et seq.*

‡ Hall's Practice, p. 393. Med. Chir. Rev., April, 1842, p. 450.

fat, leading to engorgement of the epithelial cells and of the urinary tubes." Mr. Toynbee agrees with Dr. Johnson in part, and admits that the circulation in the kidney of "an unnaturally large quantity of carbonized and azotized elements," may produce a deposition in the organ of adipose matter, but says that there "can be no doubt that albuminous urine often exists without any such deposition;"—while Mr. Busk affirms that a microscopical examination of the substance of the kidney reveals the following appearances: "the tubuli uriniferi were found to be in parts indistinct or obliterated, and in others to be filled with a semi-opaque, white granular material, soluble or rendered transparent by acetic acid, and *presenting none of the characters of oil, very few globules of which were observed in any part of the gland.* It was the dense white material, consisting of minute sub-globular refracting particles, soluble in acetic acid, the accumulation of which in the larger straight tubuli uriniferi constituted the white striæ above mentioned." Dr. Robinson,* in his work on "*Granular Disease of the Kidney*," mentions a sub-acute form, in which there exists "*more or less albuminous deposit*" into the substance of the kidneys. M. Rayer† has met with true tubercular disease of the kidneys in *albuminuria*.

This contrariety of opinion in regard to the nature of the deposit into the kidneys, which gives them the granular appearance, should cause us to hesitate in giving the opinion which we entertain upon the subject, particularly when we remember that this opinion is not founded, as it should be, on actual experiment and observation on our own part; but we, nevertheless, will express our convictions founded upon the observations of others, with the hope that they may be either fully disproved or established by subsequent observers. We regard the albumen, then, which is passed off in the urine, as nothing more nor less than *tubercular matter* or *vitiating albumen*, which, instead of being deposited in the glands or other tissues, finds an outlet from the system *in this way*, and that the *granular state of the kidneys* is a kind of *tuberculosis of these organs*, caused by the *deposition of this albumen in its passage through them*. This being thus a vicarious discharge of tuberculous matter, is a relief to organs that might otherwise have suffered. In this way, no doubt, many purulent diseases come to a crisis by the elimination of the deleterious matter through the alimentary canal, or some other emunctory, possibly the kidneys or the liver. The proof which we have of the identity of this disease with strumous or tubercular diseases, is founded chiefly on the following observations:—

"In persons of a scrofulous constitution, I have observed," says M. Rayer,‡ "the urine, which a short time before exhibited no abnormal phenomena, assume all the characters observed in cases of chronic albuminous nephritis with general dropsy." Among the causes enumerated by this writer, are mentioned "scrofulous disorders" and "*pulmonary phthisis*." This last is said to have a "*marked effect*." Syme§ has also met with albuminous urine in "*strumous disease*." Scrofula and tubercular deposits are referred, by M. Fourcault,|| to the same cause as albuminuria. But by far the most interesting article which I have seen upon the subject is from the pen of Dr. Thos. Bevil Peacock,¶ in the *Am. Journ. of Med. Sciences*,

* Med. Chir. Rev., April, 1842, p. 451.

† Ibid., Oct. 1841, p. 458, *et seq.*

|| Am. Journ. Med. Sci., Jan. 1845, p. 194.

¶ Ibid., Oct., 1845, p. 450, *et seq.*

‡ Ibid., p. 452.

§ Ibid., April, 1842, p. 452.

for Oct. 1845. The title of this paper is, "On the co-existence of granular disease of the kidneys with pulmonary consumption; and on the influence of the strumous diathesis in predisposing to the renal disease." After stating the opinion of Dr. Bright that "the condition of the body in this form of renal disease is unfavourable to the existence of phthisis," he cites the adverse opinions of other men. Dr. Christison says, "I have very little hesitation in putting down the scrofulous diathesis among the predisposing causes of granular disorganization of the kidneys. In repeated instances I have been led, by the supervention of œdema during phthisis, to examine the qualities of the urine, and although the result has not been invariable, still in a great proportion of cases of the kind, the secretion has been found to possess the properties essential to the renal disease." M. Rayer "expresses the concurrence of his experience and views with those of Dr. Christison." Martin Solon "found the lungs tuberculous in four out of ten dissections of persons who had sunk under granular disease of the kidneys." Dr. Osborne states, that "of thirty-six cases of renal disease with albuminous urine, which had fallen under his notice, four originated in scrofula, and in one of the only two dissections of cases of renal affection producing dropsy, which he relates, the lungs were in an advanced state of tuberculous disease." Dr. Peacock then goes on to give the relative proportion which tuberculous affections of the lungs bear to granular disease of the kidneys, as deduced from the observations of Dr. Gregory, M. Rayer, and himself, and he finds, that by "placing together these observations, which do not differ more widely than will always be the case in limited series of facts, it results, that of 117 cases of decided granular disease of the kidneys, extensive tuberculous affections of the lungs existed in 26, and a smaller number of tubercles of recent origin in 10 others; or, out of the 117 cases, 36, or nearly one-third (30.7 per cent.), contained more or less extensive advanced tuberculous deposition in the lungs, a proportion much larger than that deduced by Dr. Bright from his table,"—and without going more into detail, we must refer our readers to this valuable paper, and give the result of Dr. Peacock's inquiries. "In conclusion," he says, "we have seen that pulmonary consumption very frequently co-exists with the granular disorganization of the kidneys, and that so far from being an accidental complication supervening during the last stages of that affection, *the pulmonary usually precedes the renal disease*. We have also found that in cases where the lungs are healthy, there frequently exist other proofs of the *tuberculous* diathesis, and we can therefore scarcely withhold the conclusion that this *constitution very powerfully predisposes to the renal disorganization*. The diseases dependent on the *scrofulous constitution* being most frequent during infancy and adolescence, it follows that at these periods the renal and strumous affections should most generally co-exist. This inference is *confirmed so far as relates to the coincidence of phthisis and renal disease by the analysis of the cases before referred to*."

Now since it has been established, by the experiments and observations of Magendie and Andral, that the escape of the albumen from the liquor sanguinis does necessarily give rise to effusions of serum into the various cavities and tissues, *the effusion*, in the disease we are now considering, is, as has been said in relation to the effusion from tubercular meningitis and peritonitis, nothing but a complication of the original disease, and of course must be considered as isopathic with it, and as the serous parts of the blood may not be effused into the tissues, but pass out also by the kid-

neys we have a *form of diabetes** which is also entirely isopathic with the granular disorganization of the kidneys. We shall have occasion to speak of diabetes again under the head of hydropic types in which the disease may be idiopathic. That there is a form intimately connected with Bright's disease, and with the scrofulous affections generally, we have the testimony of several writers.

In the *Provincial Medical and Surgical Transactions* is a paper by Dr. Streeten† on the medical topography of Exeter, in which he uses the following language upon this point: "Cases both of diabetes mellitus and insipidus are by no means uncommon. Every case of true diabetes that has come under my observation here has terminated in tubercular consumption. This has been so uniformly the case that the conviction forces itself upon me that *it is essentially a symptom of scrofulous disease*, and that the kidney is made to be an emunctory of those matters otherwise colliquatively discharged by the skin." Dr. Bell,‡ in an *Essay on Diabetes*, in speaking of its complications, particularly dwells on phthisis pulmonalis, and the reviewer says, "a very common complication it is; granular disease of the kidney is not a very rare one, and dropsy, generally a consequence of the latter, closes the scene."

We must pass over hastily the remaining affections which we regard as isopathic with the present species, and content ourselves by a bare reference to them. Scrofula, it is well known, may affect the tegumentary tissues giving rise to a form of *ophthalmia* and otitis, and to many so called *skin*

* We hope to treat more fully of diabetes in another place in reference to its true pathology. We may be permitted to say here, however, that the change from the albuminous to diabetic or saccharine urine may easily be explained upon chemical principles by simply admitting a slight modification in the secretory or excretory action of the system. It is stated by Dr. Barlow (*Med. Chirurg. Rev.*, vol. xxxviii. p. 256), that 9 equivalents of sugar + 1.1 equivalent of ammonia—5 equivalents of water and $\frac{1}{2}$ equivalent of carbonic acid, when reduced to 100 parts, give very nearly the equivalents in albumen, according to the analyses of Gay-Lussac and Thénard. If this be so, then it can readily be perceived how the one might be converted into the other—for although the experiments and observations of Liebig and Boussingault tend to establish the doctrine that there is no creation of these proximate principles by the action of digestion, but that each is found ready formed in the articles of diet which we consume, yet they do not appear to me (vide an interesting paper entitled "*Récherches Expérimentales sur le développement de la graisse pendant l'alimentation des Animæ*", par M. Boussingault"—*Annales de Chimie et de Physique*, tome xiv, p. 419; also "*Expériences sur l'engrais des oies*", par M. Persez"—*Ibid.*, p. 408), to falsify the notion that in the processes of transformation which take place in the system, one of these principles may be converted into another, when the same ultimate elements exist in both. Thus fat might be made in some cases to replace the sugar, both being composed of the same elements, although in different proportions, and would thus account for those appearances in the kidneys mentioned by Dr. Johnson and Mr. Toynbee. This seems to be the opinion of Dr. Watts, (*Ranking's Abstract*, vol. i. p. 219.) who mentions that great obesity, or "*the production of fat, is one of the precursors of diabetes.*"

Supposing this form of diabetes and dropsy to be isopathic, we find a similar sentiment expressed by Spenser in his "*Faerie Queene*," which we give as being more curious than useful.

"Full of diseases was his carcas blew,
And a DRY DROPSIE through his flesh did flow,
Which by misdiet daily greater grew—

Such one was Gluttony, the second of that crew."—Book I. canto iv.

† *Med. Chir. Rev.*, vol. xli. p. 11.

‡ *Ibid.*, vol. xlii. p. 521.

diseases. Among these latter we may mention a form of *eczema** and *impetigo*, and we think the disease known as *molluscum* may very properly come under this head. From the descriptions which I have seen of it, it seems to bear a close resemblance to the disease among horses called by Dr. Coleman "*scrofula farcimen*." Under the same species we would rank also the Greek and Arabic Elephantiasis, which, notwithstanding the high authority of Dr. Good, we regard in common with Pinel and many other writers, as the same disease, both being forms in which *scrofula* may manifest itself in hot or tropical climates.

Liberty County, Geo., May 10th, 1847.

ART. IV.—*Amputation above the Shoulder-joint.* By DAVID GILBERT, M.D., (of Gettysburg, Pa.): Prof. of Surgery in Medical Department of Pennsylvania College, Philadelphia.

IN furnishing the following case for publication, the object is to present to the profession the facts and circumstances connected with it, that each one may compare and collate these with others hitherto had, in making his deductions, when called upon to decide in emergencies of a similar character. The writer, in his private practice, has always been opposed to a speedy resort to operative procedures; and as a public teacher, has never advocated *heroic surgery*. In his first *introductory lecture*, published by the class of session 1844-5, he thus expresses himself. "Let your knowledge, therefore, of this branch (Mat. Medica) be minute and accurate, and you will be surprised at the victories you are able to achieve over disease, and to find how frequently you can dispense with the knife, which should always be your *last resort*, and to succeed without which should be your constant aim." The same principles are advocated in the published *introductory* of last session; whilst in the regular lectures of the course, on *operative surgery*, the importance of deferring the use of the knife until every other plan of treatment has failed, or is unavailing, is constantly inculcated. Whatever of novelty or of boldness, therefore, is apparent, at first view, in this case, since it extends beyond the ordinary limits of operative surgery, it is believed, is justified by the nature of the disease, the condition of the part, and the circumstances of the patient, and is in entire consistency with the established axiom in Surgery, "that operations ought to be performed only when the danger and inconveniences to which they expose the patient, are less than those of the disease treated otherwise."

Whilst on a professional visit, during the summer of 1846, to the *valley of the Susquehanna*, my advice was solicited in the case of the Hon. J. Wagon seller, M.D., of Selings Grove, Union County, Pa.

* Vide Lugol, *Researches and Observations on the Causes of Scrofulous Diseases*, and *Med. Chir. Rev.*, vol. xlv. p. 258; *ibid.*, xxxviii. p. 508.

I found the Doctor confined to his bed, and suffering intensely from an enlargement of the left shoulder and parts adjacent. During the summer, he had also had an attack of *intermittent fever*, and subsequently *hepatitis* supervened, from which he had not yet entirely recovered, there being pain in side, evening exacerbations of fever, excretory functions deranged, &c. His attending physicians, Drs. Shindle and Hottenstein, at the period of my visit, were directing their treatment towards the removal of the latter affection.

The enlargement and irritation of the shoulder were paramount, however, to the diseases mentioned, and it was to these that my attention was specially directed.

The following history of the case was given me by the attending physicians, and the patient himself.

In Oct. 1845, eleven months previously, he was thrown out of a small wagon, whilst traveling rapidly, and the whole force of the fall was expended upon this shoulder, which came in contact with the ground. The effect was, severe contusion of the part, without either fracture of any of the bones, or dislocation of the joint. The tumefaction and subsequent inflammation gave way to appropriate treatment, after a few weeks, but were not entirely removed; the remaining enlargement and inflammation resembling ordinary chronic rheumatism. During the succeeding winter, he attended to his duties as the Representative of his district, in the Senate at Harrisburg. The affection of the shoulder continued during the session, so that the functions of the entire arm and hand were greatly impaired. Soon after his return home, subsequent to the adjournment of the Legislature, in May 1846, whilst standing on the platform of a canal packet, about two feet lower than its deck, upon which his left hand rested, he made a sudden effort to recover his umbrella which had fallen into the water at the side of the boat. The water being lower than the platform, he lost his equilibrium, to regain which, he made the effort with his injured arm, which resulted, as was then supposed, in fracture of the upper part of the humerus, and dislocation of its head; there being deformity and crepitus. Tumefaction of a most painful character speedily took place, which rendered manipulation and the necessary extension, and counter-extension insupportable. Owing to this, efforts to ascertain the precise nature of the injury, and to reduce the deformity, were abandoned, before any satisfactory results were had. The succeeding inflammation, although violent, yielded, after several weeks, to the general and local treatment employed. Although the tumefaction was greatly reduced, and deformity was apparent, yet the precise nature of the injury, so far as the bones and joint were involved, could not be satisfactorily decided. In July, about six weeks after the accident occurred, he visited the city of Philadelphia, for the purpose of consulting some of his medical friends there. Not having obtained any satisfactory opinion as to the precise nature of the injury, or the treatment to be pursued, he returned again to the country. Soon after his return, he met with Joseph Lutz, M.D., of New Berlin, who suggested the use of Dr. Fox's apparatus for fracture of the clavicle, which corrected the deformity, and relieved the pain and seemed to answer every indication; but in a few hours the pain returned so as to be insupportable, and thereafter every form of mechanical support was discontinued.

From this period, the shoulder commenced steadily and regularly to en-

large, although local depletion and counter-irritation, with general treatment, were persevered in, by the attending physicians. On examination, (September 2,) I found the shoulder enormously enlarged, measuring $21\frac{1}{2}$ inches in circumference, from the axilla over the acromion, and 15 inches from the same point, horizontally around upper part of arm, whilst the measurements of the sound shoulder at corresponding points were 11 and $8\frac{1}{2}$ inches. The tumour presented the appearance of a large segment of a regular sphere united to, and blended with the shoulder sending off several processes. One of these extended down the posterior part of the arm along the triceps muscle to within five or six inches of the elbow-joint; a second backwards, within the fold of the tendon of the latissimus dorsi muscle, over the inferior costa upon the infra-spinatus muscle of the scapula; and another forwards and upwards over the coracoid process of the scapula, and resting firmly against the lower surface of the acromial extremity of the clavicle. The skin covering it was brawny—thickened and porous; as the normal skin appears when seen through a magnifying glass. The whole tumour was tender to the touch, especially at the acromion, so that manipulation was intolerable. It was hard—indurated; indeed the portion which extended backwards with tendon of lat. dorsi muscle, was mistaken by the patient himself for bone, supposing it had been displaced at the time the last injury was sustained and remained undiscovered until after the enlargement had taken place. There was no deformity apparent, such as arises from fracture or dislocation, being obscured by the enlargement. The tendons of all the muscles connected with the shoulder were in their normal condition, except that of the lat. dorsi, which was connected with the posterior extension of the tumour. Motion at the joint was not entirely lost, but every effort to move the limb produced pain.

In this condition of the shoulder and arm, it was impossible to form an opinion as to the precise character of the lesions produced at the period of the last injury, or whether fracture or dislocation yet existed.

From the history of the case, however, I had no doubt that there had been fracture near the head of the bone, possibly of the tubercles only, or even the neck of scapula might have been the seat of the fracture. The indurated mass enveloping the shoulder, and extending to parts adjacent, I supposed might have been the result of an exaggerated effusion of lymph, which, on account of the impaired health of the patient during the summer, and the diseased condition of the shoulder, from the first injury, was not assimilated or absorbed, but partook of an abnormal character. Deposits of this nature are apt to take place when inflammation is long continued in subjects in whose blood fibrine abounds, and the red particles are scanty, a condition which there was every reason to suppose was here present. The patient is of bilious temperament, and aged forty-six.

The following treatment (Sept. 2) was agreed upon.

For the hepatic affection, now having become chronic, laxatives, consisting in part of *blue mass*, pro re natâ, with gr. v of nitro-muriatic acid, three times a day, to be increased one drop a day, each dose; and daily pediluvium of the same, of the usual strength. Cups to side.

To the shoulder, an ioduretted iodide of potassium ointment, one-third stronger than the “*unguentum iodini compositum*,” to be applied daily to the tumefied parts, which are to be covered with silk oil-cloth. Diet mild, and nutritious.

Sept. 17. Patient's condition greatly improved. Pulse 90, pain in the

side relieved, tongue cleaner, appetite better, and sleep sound and refreshing. The shoulder free from pain when kept quiet, feels more natural, not so sensitive when handled, and is less indurated.

The ointment had produced miliary vesications with subsequent desquamation of the cuticle, leaving a smooth surface with a more natural colour. It was agreed that the treatment should be continued.

I received a letter from Dr. Shindle, dated Sept. 13th, in which he reports continued improvement of the general health, without change in the shoulder. The amount of acid taken at this date is 17 drops at each dose, or 52 drops daily. Advised continuance of treatment, with more generous diet, and exercise in his room.

In another letter, dated Sept. 18th, Dr. Shindle reports, that patient continued to improve until the 16th inst., when, in consequence of a sudden change of the weather, he took cold and had a return of fever; this had, however, yielded to antiphlogistic means, the exhibition of the acid being suspended. At the urgent request of the patient and the doctor, I visited him on Sept. 24th. Found him greatly improved in general health, and his spirits were quite revived. Able to be out of his bed during the greater portion of the day. Appetite good, pulse 85, fuller and less quick; skin and tongue natural, bowels rather torpid, pain of side entirely gone. Shoulder about one-fourth of an inch larger in circumference, colour a lighter red, friction pleasant, and free manipulation can be tolerated. Gave it as thorough an examination as was possible, in its enlarged condition. Passed the ends of my fingers up from the axilla under the coracoid process, head of scapula, as well as inferior costa, but the parts were so enveloped in and bound together by, the adventitious morbid mass, that it was impossible to discover any lesion or displacement. I could not observe any motion at the joint; all efforts to produce this by using the humerus as a lever gave intense pain. The great bulk of the tumour lay on the outside of the upper third of the humerus, which it surrounded. It extended up, and was attached to the outer third of the clavicle, and to the coracoid, acromion, part of the spinous process, and head and neck of the scapula. The organic alteration of the skin extended wherever the tumour was found, except the process which extended backwards under the lat. dorsi muscle. The muscles adjoining and those connected with the shoulder and arm, were in their normal state, except where they became involved in the enlargement. Here they were so intimately united to and blended with the general mass, that it was impossible to decide whether they were incorporated with it, and partook of its abnormal condition, or were merely pushed aside by the deposit. The length of the arm from the olecranon to the acromion, as nearly as could be ascertained, was the same as that of the other side.

The acid and bath with laxatives occasionally were continued, as also the application of the ointment of the ioduretted iodide of potassium, increased to double the strength of the officinal preparation.

Visited patient daily, until 29th, during which there was improvement of general symptoms. He again became interested in business, and enjoyed the visits of his friends. Size of shoulder stationary.

Oct. 7th. Received a letter from Dr. Shindle, who reports that his general health is without change. Size of tumour stationary above, but is extending towards the elbow, along the course of triceps muscle. Continue treatment.

Visited patient Oct. 15th. Found him sufficiently strong to leave his

chamber to visit the store, which is at some distance from his dwelling, and to ride out in his carriage occasionally. The shoulder slightly enlarged, measuring one inch more in circumference than when first seen (Sept. 2), and enlarging posteriorly, downwards.

Advised the application of cantharides ointment over the latter, and after the removal of cuticle, to be dressed with very weak iodine ointment. The acid to be suspended, and pills composed of ext. taraxaci and ext. hyoscyami, grs. ij of each, to be taken every evening at bed-time.

Saw patient again, October 20. Blister had drawn, but iodine ointment could not be endured. Ordered savine ointment, to keep surface discharging. Continue balance of treatment advised previously. Allow generous diet, with exercise in the open air, when weather permits.

In taking leave of the patient, he informed me, that, in accordance with the advice of his physicians and other friends, his intention was to visit Philadelphia, as soon as the term of *Medical Lectures* commenced in November, for the purpose of being under my care during the winter.

Having participated in the treatment of this case for nearly two months; and having found that whilst his general health improved, the local affection was nevertheless increasing, although depletion, revulsives, sorbefacients and alteratives, had been perseveringly and unremittingly used in the treatment, I began seriously to think of the propriety of an operation. I communicated this to Dr. Shindle, at my last interview with him, and he concurred in the opinion that it afforded the only ground of hope in the case, for permanent relief. Nothing was said as to the kind of operation that might be necessary. In reflecting upon this, subsequently, the difficulties which presented themselves to my mind, as to the manner of its accomplishment, in a case so peculiar, were of the most formidable character. The first question was as to the possibility of removing the tumour by dissection and thus saving the arm. This was desirable, even if the functions of this important member were to be greatly impaired. The impracticability of this, however, was apparent at once, for there was no external evidence that the tumour was distinct from the tissues of the arm and shoulder; it invested, moreover, the whole circumference of the joint and upper portion of the humerus, including the blood-vessels and nerves, so that if even the whole mass was unconnected with the muscles, tendons, blood-vessels and nerves, the lesion necessarily consequent to such an operation, would be too extensive, and the danger of exposing these important organs too imminent. Again, there was the uncertainty in reference to the condition of the bones and joints; there might be fracture of the neck of the scapula, or of the upper portion of the humerus; possibly of both, and certainly of either one or the other; since all accounts agree that both crepitus and deformity were present after the receipt of the last injury. The removal of the tumour alone being neither certainly practicable, nor if practicable, safe, the question of *amputation* presented itself. The operation of amputation at the joint was next considered. The apparently firm attachment of the mass to the acromion, portion of spinous and coracoid process of the scapula, and the outer extremity of the clavicle;—the uncertainty as to the seat of fracture, and condition of the joint;—and the utter impossibility of forming a flap, since the skin over the whole tumour up to the acromion and clavicle, would require removal, being unsound, at once constrained me to abandon all hope of relieving the patient by amputation at this point. The remaining alternatives then were, either to aban-

don the idea of an operation altogether, or to perform one sufficiently above the joint, to ensure the entire removal of all the parts involved in the injury, or subsequent formations, and to form a flap out of healthy parts, to ensure closure and cicatrization of the wound. This would require the amputation of the outer three-eighths of the clavicle and the acromion, and part of spinous process, coracoid process, and head and part of the neck of the scapula. The whole of the diseased mass would thus be removed, and the cut extremities of the clavicle and scapula would meet against the ribs, whilst the soft parts covering them could be easily approximated so as to close the wound. This operation, although more tedious, the amount of lesion not being greater, would be quite as safe, and the articular surface being removed, result in more speedy cicatrization, than amputation at the joint, even were there a sufficiency of integument to form flaps. Viewing this modification of amputation of the superior extremity as practicable, though much more formidable than that usually performed, and considering it the only one at all justifiable in this particular case, his age and general state of system being favourable, I resolved to propose it in consultation with others, provided the Dr. visited the city, as was contemplated.

I did not again see the patient until he arrived in the city, which was on Nov. 12th. In the meantime, however, by correspondence with the attending physician, I learned that, with the exception of symptoms of debility, his health underwent no material change. The treatment advised at my last visit had been pursued without any essential variation. On examination I found his system in an irritable as well as failing condition. Pulse from 95 to 100, appetite impaired and variable, skin dry and harsh, bowels torpid, urine high coloured and scanty, sleep imperfect and unrefreshing, and an expression of countenance indicative of great physical and mental uneasiness. He complained of neuralgic pain in the right sacro-iliac region. Of this he had occasional attacks during my visit in the fall. The following liniment had afforded relief, and was now prescribed. R. Ol. olivar, aquæ ammonia fort., aa ʒiss. Misce, dein adde Ol. origani, tr. opii, aa ʒss.—M. ft. linimentum. The tumour had increased three-fourths of an inch in its larger, over the shoulder, and one inch in its smaller or lower circumference around the arm, since the dimensions were last taken, and had extended still farther down the posterior part of the arm. The amount of adventitious mass here present is more clearly indicated by comparing the *planes* of the respective circumferences with each other; these are found to be 47 and 25 square inches in the diseased, and 10 and $6\frac{1}{2}$ square inches in the healthy shoulder and arm. The parts involved are now much more painful than they have been since the pain yielded to the application of the ointment in the commencement of September, which is evidently one cause of the general irritability of the system now present.

At my request, my friend and colleague Dr. Atlee was invited to see the patient in consultation with me on Nov. 13th. After giving him a full history of the case, and after careful and repeated examinations made by him of the patient during several successive days, and observing the effect of treatment, there being no improvement, I communicated to him my conviction as to the hopelessness of mere medical treatment, in which, as well as the character of the operation proposed, the Dr. fully concurred. I now, for the first time, made known to the patient that an operation would have to be performed, and found that his mind had been prepared for such a communication by his own reflections. It was then

agreed that George M'Clellan, M. D., be called into consultation on the 17th, who confirmed the views entertained by us; viz., that amputation above the joint, so as to remove the entire mass of disease, and form flaps for closure of the wound, was the only remedy; and as the patient was failing in strength rapidly, there should be as little delay as possible. The patient was now informed as to the precise character of the operation contemplated, and as being the only one, in the opinion of all his medical advisers, that was available in his case. Subsequently all the details of the operation, its immediate and consequent dangers, the possibility of the return of the disease, and its irremediable and certainly fatal nature, if permitted to remain, were all fully made known to him and his friends. He received these communications with the utmost calmness and fortitude, propounded numerous inquiries relative to every question involved, both as to the tumour and the operation and its results. Being himself an intelligent physician, although not engaged in practice for several years, he seemed well aware of the risk incurred by the operation, and the nature and results of his disease if left to itself. He examined minutely its symptoms and rapid progress, although he was at this time so reduced that he was confined to his bed entirely. After thus weighing all the probable results and consequences, in either event, and in view especially of the great importance to his family of even a prolongation of life, on account of his numerous and weighty mercantile and other engagements, he resolved that the operation should be performed on the following Saturday morning, (the 21st,) at ten o'clock, being nine days after his arrival in the city. The decision having been made, his mind seemed to be at ease, awaiting the period appointed with a settled resignation, occupied in making such arrangements as were necessary, provided he should not survive the immediate shock of the operation.

Having made every necessary preliminary arrangement, the operation was performed at the time specified, in the presence of Drs. W. L. ATLEE, GEO. M'CLELLAN, W. DARRACH, WILTBANK, PATTERSON, GRANT, BABB, MECKLY, JNO. M'CLELLAN, and WILSON, at the Merchant's Hotel, North Fourth street, Philadelphia, in the following manner, viz.:

The patient having taken grta. L. of M'Munn's elixir of opium one hour previously, was placed upon his right side, on a large dining table, with the leaves down. This had been prepared by covering it with folded blankets and sheets, and over these an oil-cloth was spread. The axillary artery was compressed, where it passes over the first rib, by Dr. ATLEE, with a compress and letter seal of large size. The arm having been given in charge of Dr. GEO. M'CLELLAN, I took my station near the upper end of the table, above and behind the diseased shoulder of the patient, and commenced an incision at the posterior border of the axilla, using a large sized scalpel, and extended it upwards one inch above the highest portion of the spine of the scapula. The next incision commenced where the first crossed the spine of the scapula, and extended downwards and forwards to the point of the shoulder, thence upwards and inwards along the lower edge of the clavicle to the extent of the outer third of the latter, and then upwards one inch above its superior margin. The triangular flap thus formed above the shoulder was dissected upwards, and the clavicle inside of its outer third isolated. A retractor was passed under it, and the bone thus exposed was divided with the straight edge of Hey's saw. The skin, posterior to the first incision, covering the process of tumour which extended backwards over the dorsum of the scapula, was now reflected backwards, and the latis-

simus dorsi, and teres major muscles divided beyond the limits of the posterior extension of the disease. The infra and supra spinati muscles were next cut across, and the spinous, immediately behind the acromion process, and the neck and body of the scapula exposed. The spinous process was cut obliquely from behind forwards and inwards to neck of the scapula with the common amputating saw. The neck, with part of the body of the scapula, was then sawn through close to the spinous process, with a long narrow instrument provided for this purpose. All the bony connections being now severed, an incision with a small catlin was commenced at the axilla, and carried forwards and upwards through the skin and pectoralis major muscle, so as to expose the axillary artery, (which was promptly secured,) then upwards, under the clavicle, and outwards under the coracoid process, and head and neck of scapula; dividing all the remaining attachments, and the operation was concluded. But one artery besides the axillary, viz., the external mammary, required ligature. The amount of blood lost, in the opinion of all present, did not exceed ten ounces. The bleeding was principally venous, so effectually had the artery been compressed. The surface of the wound was now carefully examined, and all suspicious tissues, and remaining lymphatic glands, were removed. The patient endured the operation, (which lasted fourteen minutes, including the time occupied in tying the axillary artery,) with remarkable firmness, asking questions as to its progress, &c. Syncope did not take place. Immediately after the operation the pulse was small and feeble, and in frequency 134. Gave patient weak brandy and water as drink. The surfaces of the wound were brought together, and the parts adjusted one hour after the completion of the operation in the following manner: The cut extremity of the remaining (about five-eighths) fragment of the clavicle received the cut surface of the body of the scapula, both resting upon the ribs at their place of junction; the triangular flap of integument, made early in the operation, above the acromion and outer end of clavicle, was brought down and completely covered the extremities of the bones which were in contact with each other; below this, the lateral flaps of integument were brought together, and the apposition of all the parts secured with five sutures, and six or eight long and broad bands of adhesive plaster. The ligatures by which the arteries were secured, were brought out to the nearest point of surface to their place of attachment, and secured by an adhesive strip. Lint wet with cold water was laid over the wound thus dressed, and a common roller applied over and around the body. The patient was carried to his bed at twelve o'clock—precisely two hours after he had left it for the operating table. Pulse at this time 120. Continued weak brandy and water as drink, and applied cold water to wound occasionally.

4 o'clock P. M. Pulse 145; ordered gruel with brandy and water as drink. 12 P. M. Pulse 140; has slept during evening; had taken gruel; skin moist but cool. Gave gtt. xxx of M'Munn's elixir of opium.

Nov. 22d. Seven A. M. Found patient refreshed, having rested well during the latter part of the night. Pulse 116, with greater volume and power; feels comfortable. Gruel for nourishment; discontinue brandy and water.

23d. Seven A. M. Patient slept during the greater part of the night. Pulse ranged from 110 to 118 during the day. No material change in the other symptoms, and treatment continued without variation.

24th. Condition of patient favourable until four o'clock, P. M., when

the skin became dry and warm; the pulse rose to 125, and became quicker and harder. Complains of thirst. Ordered the head and face to be sponged with cool water, and the internal exhibition of bicarb. potassa, grs. v, every two hours. The bowels having been sufficiently open since the operation, no laxative was given. 12 o'clock P. M. Febrile symptoms have declined, pulse 110, skin moist and warm, other excretions sufficiently free. Had taken gruel and a solution of gum Arabic as drink.

25th, 7 o'clock A. M. Has slept well since 12 o'clock. During this day symptoms continued favourable, appetite good, pulse 104. Continue diet and drink.

26th. Symptoms all favourable, and had rested well during the night. 10 A. M. Opened wound, (5 days after operation,) Dr. ATLEE present.— Found nearly the whole of it united by first intention. No discharges. Some of the adhesive strips were removed, and fresh lint was applied.

Nov. 27th. Case progressing favourably. Wound again opened, presented a favourable appearance; lint and adhesive plasters renewed.

Dec. 1st. Patient gaining strength. Some of the stitches removed, and other dressings renewed. Diet gradually improving. No medicine required. No discharge from the wound, it having united throughout except some points of integument at the sutures. The general symptoms were of the most favourable character, appetite, sleep sensations, &c., all good. The bowels being rather loose, were restrained by the exhibition of toasted rhubarb.

After this the shoulder was exposed daily, the remainder of the sutures were removed on Dec. 3d, and lint was applied to the cicatrizing points of the wound. The general health of the patient continued to improve, so that on the 11th of December, three weeks after the operation, he was able to sit up the greater part of the day, walk about his room, partaking of ordinary diet and enjoying life and the society of his friends, with renovated feelings, and the confident hope of a speedy restoration to health. The projection of the shoulder, reduced to one-third by the operation, had a rounded appearance, the spinous process having been cut off obliquely; and the remaining portions of the clavicle and scapula, thus united, performed their offices, in reference to their attachment with the muscles of the trunk and head, quite as well now as they did previous to the operation.

Before the close of another week, however, these bright prospects were destined to undergo a serious change. On the 16th of Dec., I was hastily summoned to my patient, whom I found in the cold stage of *intermittent fever*, which he had had when it prevailed extensively in the valley of the Susquehanna, during the summer and fall previously. This yielded in a few days to the ordinary treatment. Very soon, however, a more obstinate and less tractable affection, viz., the *neuralgia* of the loins, again made its appearance. This was now much more severe than at any previous period, extending to the sacro-iliac region of the left side also. From this period (Dec. 20th), until March, all the various plans of general and local treatment for neuralgia, known to the profession, (having had the advice of several medical gentlemen, as well as of his regular attending physicians,) were successively and fully tested, without accomplishing any other than temporary amelioration of the pain. During this time, the patient was generally able to be out of bed part of the day. His appetite was tolerably good, and his strength did not decline materially. It was evident that the meteorological condition of the atmosphere exerted an influence upon his

sufferings, and hence the hope was entertained, that as soon as the genial warmth of spring and summer returned, his pains would subside and health might be restored. As spring approached, he made his arrangements to return to the country, and accordingly on the 5th of March he left Philadelphia in the cars for Harrisburg, where he remained until the adjournment of the Legislature took place, and then returned home to Seling's Grove, in a packet boat. After his return to the bosom of his family and the society of his friends, he continued to suffer from the neuralgic affection, and in addition, symptoms of disease within the chest began to develop themselves, such as pain, stricture and dyspnœa; these symptoms continued to increase, and his lower extremities becoming œdematous, he expired on the 27th of April, no doubt in consequence of *effusion within the chest*. During his sojourn in Philadelphia, his highly esteemed friend, ISAAC N. SHINDLE, M. D., of Seling's Grove, a young physician of great promise, died; and having no confidence in any further remedial treatment in his case, he did not regularly employ any other physician after his return. My information, therefore, in regard to the progress of the case after this, being derived from non-professional friends, is necessarily imperfect. This I regret exceedingly, as also that no full post-mortem examination was had. I had written to one of his friends and requested this, but an examination of the shoulder only was made. From this it appeared that some of the lymphatic glands under, as well as on, the scapula, had become enlarged and softened, "presenting the appearance of the brain of fish."

The ligature of the external mammary artery came away at the close of the fourth week, whilst that of the axillary remained until in the eighth week after the operation.

The arm and shoulder with the diseased mass, as removed, have been added to the *Pathological Cabinet* of the MED. DEPT. of PENN. COLLEGE. A dissection was made, and the anatomical and pathological condition developed was as follows. The integument was thickened and indurated; under this, the cellular tissue was firm and condensed, not permitting the skin to glide smoothly over the parts beneath. In tracing the muscles, from without the limits of the tumour, where they were in their normal condition, it was found that they passed over, around or under the tumour and its processes, without being involved in its substance, or contracting any firm adhesion with it. Thus the coraco-brachialis, deltoid, biceps flexor, triceps extensor, teres major, latissimus dorsi, pectoralis major, &c., could all be traced to their origin or insertion, and dissected from the tumour; the only alteration observable, being elongation and attenuation of those portions which had been connected with the tumour. The blood-vessels and nerves could also be dissected out, having no other connection with the tumour than by condensed cellular tissue external to their sheath. The tumour thus exposed, presented the appearance of a large lobulated homogeneous mass, of a dull pink colour, resembling the pancreas, in structure and colour, and therefore we had very little difficulty in deciding that it belonged to the "*pancreatic sarcoma*" of authors.

The head of the bone was found in the glenoid cavity, without any evidence of its ever having been dislocated. The synovial membrane of the joint did not present a perfectly healthy appearance; a portion covering the head of the bone, as also a portion of that lining the glenoid cavity, had lost its lustre, and was slightly thickened.

The humerus had been the seat of comminuted fracture immediately below its anatomical neck and tubercles. From this point downwards, in-

cluding nearly the upper half, it was destitute of the animal constituent of bone; the earthy, when the periosteum was removed, not having the usual cohesive properties, was exceedingly friable, so as to be broken down by the pressure of the finger alone. This disintegrated condition of the humerus extended down farthest posteriorly; that being the surface of bone next to the posterior process of the tumour, so that the sound portion of the humerus, at its upper end, presented the appearance, after separation, of the disorganized bone having been fractured obliquely at that point.

The following question presents itself in reference to the pathological condition thus displayed. May not an unreduced comminuted fracture, as a continued irritant, so derange the nutritive process, at and about the seat of accident, as to induce an abnormal callus, constituting this local accidental *carcinoma* in the form of *pancreatic sarcoma*, as here found? All this may occur without a carcinomatous condition of the blood; the cacoplastic deposit may be wholly owing to the continued local irritation, and implicate carcinomatously only the seat of irritation.

This inorganic deposit is entirely dependent on the nutritive function of the part in which the deposit is made, unless subsequently it should assume some one of the malignant forms of *cephaloma*, in which the organic deposit possesses itself properties by which its subsequent developments are affected, independently of the nutritive functions of the parts in contact, except so far as the material of growth may be derived from this source. The former condition, or *carcinoma*, apparently from mere local causes, being present, in the case of our patient, and all the external indications, such as cachexy, &c., of the latter state being absent, we were encouraged to hope that a permanent immunity from the disease would be secured by the operation. Such results, however, were at all times spoken of with due precaution. But our object is to present the facts of this case merely.

The issue, we trust, has proved, that where an operation above the joint becomes necessary, its performance is not only practicable, but subsequent union of the wound is more speedy, and recovery quite as certain as when performed at the shoulder-joint. It is, however, liable to all the dangers incident to operations of the largest class, after which the persistence of life is precarious, even under apparently the most favourable circumstances; and when associated with other diseased states of the system, as in the case of our patient, anticipations of entire success, however fondly cherished, are destined to meet with almost certain disappointment.

ART. V.—*Osteo-Sarcoma of the Lower Jaw. Removal of the body of the bone without external mutilation.* By J. MARION SIMS, M. D., of Montgomery, Ala.

JACK, a negro man, aged 68, the property of John M. Sanders, Esq., of Macon Co., Ala., was the subject of this operation. In 1843 he discovered a small tumour at the symphysis, just at the junction of the lip and gum. It was painless; grew very slowly; almost imperceptibly, till it gradually embraced nearly the entire body of the bone; the third molar tooth bound-

ing its limits on the right, while it extended quite to the angle on the left side. As in all such cases, the teeth were somewhat loose and greatly displaced. The left side was more prominent than the right. The tumour was very hard at some points; quite soft and elastic at others. Just at the root of the central incisors was a small opening, constantly distilling a sero-gelatinous looking fluid. At a point near the last molar, on the left, was another opening, giving vent to pure pus, which had been discharging for a month or more. His breath had the peculiar disagreeable smell always attending extensive ulcerations of the mouth. His general health was good. At night he would get sick, and vomit in consequence of swallowing the secretions from the diseased bone: not so during the day, as he would then spit them out.

The mouth of the patient was of enormous size, to which alone I was indebted for the happy thought of removing the bone in the manner in which it was done. The very moment that I first saw him, it occurred to me to take the bone out through the mouth without any external incision.

The operation was performed on Tuesday, 5th of January, 1847, with the assistance of Drs. Boling, M'Lester, Jones, Spear, and Taylor.

The first step of the operation was to separate the diseased from the healthy bone, which was effected by the chain-saw, thus:—with a long narrow sharp-pointed bistoury, I made a puncture at the base of the jaw immediately under the place of the second molar, on the right side, running the knife flatwise into the cavity of the mouth, between the cheek and the bone, and as close to the latter as possible. One end of the chain-saw was now passed along the blade of the knife, or rather an eyed tube, armed with a ligature previously attached to the saw, and the knife withdrawn. It was again introduced through the same external opening, but was now carried into the cavity of the mouth by thrusting it up on the inside of the bone, between it and the tongue. Through this new channel the other end of the chain-saw was passed, and both ends drawn, *pari passu*, till the middle of the saw rested against the base of the bone, while the ends hung out at the left corner of the mouth. Thus I had the saw fitting snugly around the bone at the expense of a puncture not more than a quarter of an inch long.

The jaws were now opened to the fullest extent, and the left angle of the mouth widely retracted, while the saw was brought across the dorsum of the tongue, and the bone quickly severed by sawing from without inwards, and slightly upwards. As soon as the bone was divided, the saw was liberated by clipping the super-imposed gum with scissors. In like manner the bone was divided on the left side; but, as it had to be cut right at the angle, to get clear of diseased structure, the saw had to be passed from within outwards and downwards, its two ends hanging out at the external opening just under the angle, and thus the bone was easily divided from above, downwards and backwards. The next step in the operation was to dissect the lip, chin and cheeks from this loose diseased mass, turn-

ing the lip down under the base of the bone. This required some little caution in putting the parts sufficiently on the stretch, and cutting close enough to the bone to avoid the facial arteries. After liberating the right side of the bone, getting it on the outside of the angle of the mouth, so that I could make a lever of it, the ease with which the operation was finished was a matter of great surprise to me. By rotating it inwards on the axis of the left side, it was easy to separate the attachments from the outer surface, and by reversing this movement it facilitated greatly the dissection from the muscles of the tongue and throat, while *traction* brought it so far out, that its separation from the soft parts at the angle gave no trouble at all. Just as the genio-hyo-glossi muscles were severed from their origin, the old man's head flew back, and he made a distressing sort of suffocative sob, when it was immediately discovered that the assistant was holding the ligature loosely, which had been previously passed through the frænum linguæ for the express purpose of preventing a retraction of the tongue. By seizing the ligature quickly, and putting it on the stretch, so as to draw the tongue forward, the cause of this sudden alarm was instantly arrested. The only artery requiring a ligature was the left facial, which was cut by a careless slip of the knife after it had been cautiously separated from its bed in contact with the bone.

The operation being completed, the cavity lately occupied by the diseased bone was filled with pledgets of lint, wet with creosote water, for the purpose of arresting the slight hemorrhage. The only dressing used was a bit of paste-board, soaked in warm water, and moulded on to the chin of a healthy man, so as to form a perfect encasement of the whole inferior maxillary region, which, being applied, was sustained *in situ* by a proper bandage.

The day after the operation the old man was chewing tobacco. In two weeks he was out chopping wood; and in a month he went home perfectly well. His pulse was regularly 72 all the time, both before and after the operation.

There are several considerations to recommend this operation in preference to the usual one with its extensive incisions.

1st. There was no external mutilation; the slight punctures, through which the chain-saw was passed, healing by the first intention, without the least mark or scar.

2d. As the third branch of the fifth pair of nerves was divided at the outset of the operation, its subsequent stages were comparatively free from pain; the stretching of the angles of the mouth being the most that was complained of.

3d. As no important blood-vessels are cut, no ligatures are required. (In this case it was my fault that the left facial artery was wounded.)

4th. There was no trouble with the after-treatment.

5th. It is just as easy of performance as the old operation.

This method of operating will be available under all circumstances, but is only proposed for the removal of the body of the bone, or any portion of it anterior to the angles. If the mouth should be small, and the diseased mass too large to be brought through entire, it will be very easy to divide it near the symphysis, or elsewhere, as the judgment of the surgeon may determine, and remove a piece at a time. Of course, where the jaw has to be disarticulated, the *curvilinear incision*, first suggested and executed by our distinguished countryman, Dr. Mott, will always be indispensable.

ART. VI.—*Observations on Yellow Fever.* By E. H. KELLY, M. D., of Mobile, Ala.

AMONG the diseases of common occurrence in various portions of the world, which, from their fatality and the discrepancy of opinion that exists as to their true character, and proper mode of treatment, demand a more close and accurate investigation, may be ranked the Yellow Fever.

The difference of opinion which prevails among medical writers in relation to the pathology and therapeutical management of this disease, may, in part, be attributed to the circumstance of the more intense grades of remittent, or miasmatic fever, which are endemic in the same localities, and at the same seasons with the yellow fever, having been, in many instances, mistaken for the latter, but which, however closely they may resemble it, in many of their leading symptoms, differ from it essentially in character.

Having had, during a practice of sixteen years, in the cities of New Orleans, Charleston, and Mobile, ample opportunities of studying the yellow fever in all its grades, from the mildest to the most malignant, I have thought it would not be uninteresting to record the results of my observations. However imperfect these may be esteemed, they may nevertheless be useful as materials for the formation of a more exact history of the disease, than are most of those with which we have been furnished by European writers.

The yellow fever may be defined to be a distinct form of continued fever, consisting of a single paroxysm, varying in duration, but without any true remission from its commencement until its close. This single paroxysm may terminate favourably, in rapid and complete convalescence, or unfavourably, in a state of collapse followed by death.

In many cases, however, the first paroxysm of fever, when it terminates without the occurrence of collapse, leaves the organism in a state of susceptibility, that renders it peculiarly liable to a recurrence of fever. This consecutive fever is to be viewed as the result of the derangement of

the secretory functions—of visceral obstructions, or of a chronic inflammation of certain of the tissues, the sequelæ of the violent action existing during the first paroxysm—it is hence, a true epiphenomena.

It is this occasional recurrence of fever which has probably induced a few medical writers to attribute to yellow fever a true remittent or even intermittent character.

Although the disease possesses but very few essential, or strictly diagnostic symptoms, still these few are sufficiently pathognomonic to enable us to recognize the yellow fever, with great certainty, as a peculiar and distinct affection. They are—the turgidity of the vessels of the conjunctiva; the swollen suffused appearance of the eyes, and their pink, or red, muddy, or glassy appearance—giving to the countenance, in many cases, a drunken, besotted expression, which is, to a certain extent, characteristic. In the aged, from the intense redness of the adnata, and the dryness of the conjunctiva, the eyes assume a peculiar staring and ferocious aspect. There is always in the yellow fever a peculiar anxiety in the expression of the countenance, approaching to what is observed in tetanus, and which differs from that common in the more malignant forms of remittent fever. The lower eyelid is in some cases dark and swollen, as if blood were effused into its tissue. There is pain in the forehead and orbits, not diffused, as in bilious fever, and rarely extending even to the temples. There are, also, pains in the knees and calves of the legs with cramps, the latter being more remarkable in this than in the other forms of fever. An intolerable rachialgia is also a marked and peculiar symptom. There is increased sensibility of the epigastrium, with irritability of stomach and vomiting, the matters discharged consisting simply of the ingesta, or of a glairy fluid, rarely of bile.

The mental as well as physical powers become rapidly and greatly reduced. Great restlessness and jactitation are more severe than in almost any other fever. The tongue is often swollen, pointed, dry, and with crimson edges; it is coated throughout with a layer of a pasty consistence, or the coating terminates in a yellow fur towards its base. From the intumescence of the tongue, the pressure of the teeth gives to its edge a festooned appearance. Its papillæ become separated, and, as the disease advances, deep fissures appear to penetrate its substance.

The peculiar acid alliaceous odour of the breath, and the dark-coloured stools described by Louis, and which are distinguished from the dark dejections of typhoid fever by the absence of diarrhœa, meteorism, and stupor, are among the characteristics of yellow fever. The dark discharges peculiar to this disease, are never observed in cases of gastritis, from which the yellow fever differs essentially in its pathological character.

Ptyalism is more readily induced in yellow fever, than in the bilious remittent fever. The burning, acrid sensation in the stomach, the nausea, and the vomiting in the more advanced stage of the disease, are more pecu-

liarily distressing than in the other forms of fever—and the matter resembling the colluvies of port wine, or coffee grounds, discharged from the stomach in yellow fever, differs from the dark discharges from the stomach occasionally observed in the former.

The yellow colour of the surface, which has been regarded as pathognomonic, confined in some cases to the conjunctiva, the nose, lips, and ears, while, in others, it extends over the surface generally, varies from a pale lemon hue, in patients of a fair complexion, to a deep orange, in those who are naturally sallow.

A torpor more or less marked of the cutaneous capillaries, evinced by the slow return of the blood when pressed out by the finger, as if these vessels were in a state of passive hyperæmia, has been referred to as characteristic of yellow fever. I have myself observed it.

A special characteristic of yellow fever is the immunity from a second attack which those enjoy who have once been affected with the disease. Persons, on the other hand, who have experienced an attack of bilious fever acquire an increased susceptibility to its recurrence.

That yellow fever is not simply an aggravated form of bilious fever, is evident from the fact that the two diseases seldom prevail together; and that when both do occur simultaneously, the mortality of bilious fever is not increased. In 1824, '28, '37, '38, '39 and '40, when the yellow fever prevailed in Charleston, no cases of bilious fever were observed; the same fact was observed during the prevalence of the yellow fever in 1832, '33 and '35 in New Orleans, and in 1837 and '39 in Mobile. In 1840 and '41, however, the city of Mobile continued particularly healthy, while the surrounding country was very sickly.

While the yellow fever is only of occasional occurrence in many parts of the Southern States, an attack of bilious remittent of a most obstinate and malignant character, is endangered by sleeping for a single night, during the autumn, in these same localities, even in persons who are perfectly proof against the occurrence of the yellow fever.

According to Dr. Stevens, in bilious fever the blood, at the commencement of the disease, is cupped and sizzly, which is not the case in yellow fever; in the latter disease, also, the serum has been observed to be of a deep orange colour.

Another characteristic of yellow fever is the fact recorded by Pym, Smith, and others, that its invasion occurs, in four-fifths of the cases, at night, and without the rigor by which fevers of a miasmatic origin are ushered in.

The foregoing circumstances, with the additional circumstance that, while the yellow fever is an endemic of the island of Barbadoes, where the bilious remittent fever has never prevailed epidemically, and that it prevails almost every year at Vera Cruz, in the neighbourhood of which no marshes exist, prove very clearly that the disease is a distinct and peculiar form of fever.

Indeed, so strongly marked is the diagnosis between yellow fever and the bilious remittent fever, that I have never found any difficulty in distinguishing the two diseases, unless the attack of the first was very mild, or occurred in children, in whom fever is often masked.

The supervention of yellow fever on an intermittent, or remittent, with the supposed mingling, in this manner, of their types, has been adduced as an evidence of the identity of the two diseases, and that the only difference is in their intensity. Such an argument is about as valid as it would be to infer the identity of small-pox and measles, from the fact that the first may supervene upon the latter.

It was a common occurrence, during the prevalence of the cholera at New Orleans, in the autumn of 1832, for a person to be attacked with yellow fever, and before, or as soon as the febrile excitement ceased, for the patient to be seized and quickly destroyed by the cholera in its most marked and malignant form. Yet no one inferred from this that the two diseases were identical in their nature.

A person may have been, as is known to be frequently the case, attacked with a chill, followed by a fever of an intermittent or remittent type, several months before the occurrence of an epidemic of yellow fever; during the latter, he is seized with a chill, supra-orbital pains, rachialgia, &c. These symptoms he supposes to be merely a recurrence of the disease under which he had been previously labouring. He nevertheless confesses that his sufferings are greater than they were before; and his fever, instead of continuing for six or twelve hours, or, if longer, with marked exacerbations and remissions every day, lasts, without any very manifest remission, for from thirty-six to seventy-two hours, and then terminates favourably, or in a state of collapse, with black vomit, &c. Now the question is, are the latter symptoms to be considered as indicating merely a recurrence or continuance, in a more aggravated grade of the original disease, or do they not rather mark the occurrence of a new and distinct affection?

I have invariably remarked that, whenever yellow fever supervenes during an attack of intermittent or remittent fever, the characteristic symptoms of the latter disease are immediately and entirely lost, and a new set of symptoms take their place; the fever is no longer marked by intermissions or remissions, and every thing indicates that we have to do with a very different affection from that which previously existed.

Without attempting to point out every unimportant symptom that may occur in the various grades of yellow fever, I shall confine myself to a description of the two modifications of the disease which are most generally met with; and which modifications may be referred to a difference in the temperament and susceptibilities of the individuals attacked, as well as to a difference in the intensity of the cause by which they are produced.

The phrases *inflammatory* and *congestive*, being those in common use, may be adopted to indicate the two modifications referred to.

The first, or inflammatory form, as it has been denominated, may or may not be ushered in by a chill; which, when it occurs, is soon succeeded by increased heat of the surface, and a sense of soreness or dull pain, with increased arterial action, throbbing of the carotids and temporal arteries, and a quick, full, tense, and strong pulse. The patient complains of acute supra-orbital pain, and severe rachialgia; a sense of anxiety and constriction, and of intolerable heat at the præcordia. He is desirous of cool air, and drinks. There soon occurs more or less nausea, which constantly increases, and terminates at length in a distressing retching or vomiting. The characteristic black vomit may occur at this early stage, but very rarely does. The abdomen becomes tense and tender upon pressure, from which the patient recoils with horror depicted upon his face. The conjunctivæ of the eyes become deeply injected and suffused; the face is flushed, the tongue swollen, flabby, and indented at its edge; its centre is coated with a yellow, or brownish fur, while the sides are of a deep crimson. The surface of the body is parched, and quickly assumes a yellow hue; occasionally, however, the skin is moist. The countenance has an anxious, gloomy, sad or impatient expression. There is great confusion of mind. The bowels are usually torpid, and difficult to move, and the urine is high-coloured and scanty.

This first stage lasts from four to twenty-four, thirty-six, or seventy hours, its average duration being about forty hours; when the second stage, which Lining denominates the stadium without fever, ensues. The pulse now appears natural, though somewhat weak; the eyes are less red, and have more of a yellow tinge; the pains of the head, back and loins, diminish; the skin becomes cooler, sometimes moist, but the moisture is unequally distributed over the surface, or confined to particular portions of it. The pain and sense of burning at the epigastrium diminish. The vomiting, which continues at intervals, is attended with less effort. The tongue is still coated with a dry, brown fur, cracked in the centre, with red edges, or it may become entirely or nearly clean. There occurs, in fact, so complete an improvement, in appearance, of all the more violent symptoms, that it is well calculated to deceive those who are unacquainted with the disease. The patient, in fact, declares that he feels well, and has often an appetite for food. He may even get out of bed, shave and dress himself, and, as I have known to occur, drink with his friends in congratulation of his fortunate escape from "the claws of Yellow Jack." But if, amid all this calm, he be closely observed, there will be detected a peculiar jactitation, and when he smiles, a risus sardonicus. He will often crave some crude and unwholesome food, as raw bacon, &c. There is also a propensity to deceive in his answers to your questions, which may lead, unless you are on your guard, to a false prognosis. If the peculiar lemon tint has not already spread

over the whole surface, you may detect it along the course of the vessels of the face, where, by looking carefully in an oblique direction, it will be readily observed.

This stage lasts from twelve to thirty hours, and glides gradually into the third stage. The symptoms of disease become more and more marked, and the prostration augmented; the pulse becomes rapid, unequal, and depressed; the patient faints on being raised from the recumbent posture; the skin assumes a bronzed or mahogany hue, which disappears when pressure is made with the finger, but slowly returns when the pressure is removed; the tongue is swollen, moist, and indented at the edges, and covered with a brown fur, having a darker streak along the median line; I have as often, however, seen it clean, with a very slight pasty coating, or of a deep fiery red, and occasionally bloody or dry, black, and cracked; the mouth, lips, and nostrils being covered with a similar dark-coloured exudation. There is acute pain at the epigastrium, especially during vomiting, which is without effort, or during hiccough. The matters discharged from the stomach, which were before simply the ingesta mixed with mucus, are now a dark-coloured flocculent fluid, varying in hue from a slate, to a dark-greenish, or chocolate colour, being often brownish, resembling muddy coffee. What are termed fly, or bees' wings, are now observed in the matters vomited; these are caused by the reflection of the light upon globules of mucus, to which are adherent particles of a black colour. The surface of the body is cold and clammy; black, acrid, and offensive discharges take place involuntarily from the bowels. Towards night the patient is usually affected with delirium; sometimes low and muttering, at others furious. Suppression of urine, hemorrhage from all the natural outlets, sighing, orthopnea, vomiting, or eructations of an offensive gas, singultus, subsultus tendinum, convulsions and coma, usually precede death. Among the symptoms of this latter stage, intolerance of light, petechiæ, meteorism, &c., which, according to Gilkrest, are not liable to occur, are enumerated by Professor Harrison in the *New Orleans Journal*.

In the congestive form of yellow fever, the peculiar shrunken, ghastly, mottled, or ashy appearance of the features, in this modification of the disease, would seem to indicate a speedy termination in death, at the very onset of the attack. The eyes have a dull, red, glassy look; there is in some cases a dilatation of the pupils. The countenance has a sullen expression. The tongue is pasty, with patches of white fur, its edges and apex being red. There is but little vascular excitement, the pulse being weak and soft, or natural. Musgrave has known the pulse to be as slow as 44 in the minute.

The attack is generally sudden, and the prostration from the very onset of the disease such as to disable the strongest individual from retaining the erect posture. Giddiness, stupor and general lethargy quickly supervene, the patient often falling asleep even when you are questioning him. In

many cases there is delirium either of a transient character, or terminating in coma. The patient is usually taciturn; he utters no complaint, but still presents indications of suffering; or he may be entirely insensible, with his eyes wide open, and exhibiting great restlessness. Gilkrest states that he has known a lividity and coldness of the extremities, equal to what are met with in cholera asphyxia, to be present, while the chest and abdomen were preternaturally hot. The skin, in most cases, becomes bronzed, or communicates to the hand, when it is touched, a peculiar repulsive sensation. The epigastrium is tender to the touch, and hiccup, hemorrhage, and suppression of urine early occur. The discharges from the bowels are small, white, or resembling pus, and have a peculiar odour; or they may be of a pea-green colour, but, in general, indicate a deficiency of bile. The occurrence of the black vomit is soon followed by death. When the lungs are particularly affected, we have lividity of countenance, soreness of the throat, orthopnœa, &c. The black vomit is sometimes preceded by singultus. The tongue presents, occasionally, an appearance as though seared with a hot iron. The stools are sometimes of a gelatinous consistence. In some cases a low monotonous wailing is heard a short time before death; the patient covers himself with the bed clothes, and is incapable of answering questions. If he is disturbed, he will endeavour to bite, scratch, and kick with great fury. When a copious hemorrhage takes place from either of the natural outlets, the black vomit and suppression of urine are less liable to occur, and when neither yellowness of the surface nor hemorrhage precedes death, another train of symptoms occurs indicative of more extensive congestion. The patient is extremely restless, deranges the bed-clothes, lays with his head over the side of the bed, and exhibits that peculiar state of indifference so common in persons labouring under sea-sickness. The tongue is dry, the papillæ are separated by deep fissures, the pulse is feeble and intermitting; there is a twitching or tremulous motion of the mouth and tongue, and, in some rare cases, trismus.

In the adynamic variety of yellow fever, which occurs in persons of deficient vital power, we have a somewhat different train of symptoms. The circulation, in these cases, is depressed; there are confusion of thought, dimness of vision, and severe headache. A sense of chilliness is succeeded by one of burning heat, under the arms and on the inside of the thighs. The pulse is small and weak, the eyes dingy, the skin of an olive hue, and spotted with vibices and petechiæ; profuse hemorrhages speedily ensue, and death takes place within four or five days. In some instances I have met excoriations about the nose, mouth, scrotum, anus and penis, a gangrenous appearance of blistered surfaces, hemorrhage from leech-bites, anthrax, buboes, and infiltration of venous blood in muscular parts.

A curious feature of yellow fever is exhibited in what have been termed the walking cases. The disease, in such cases, proceeds so insidiously, that the first indication of danger, sometimes of the attack, is the appear-

ance of the black vomit. An instance of this kind occurred in New Orleans in 1833. A Frenchman complained of being unwell. He consulted a medical friend, one of his own countrymen, to whose residence, about a mile distant from his own, he walked every day. On the fourth day of his attack I was called to him, and the first thing which met my view was the black vomit. Coma and death soon followed. Another case was related by Dr. R., formerly a respectable physician of New Orleans, but now deceased. A man came into his office, and said that his friends had persuaded him to consult a physician, although he himself believed there was no occasion for it; whilst conversing he asked for a basin, and threw up a large quantity of the black vomit. Now, in all such cases that have fallen under my observation, the disease had proceeded through its several stages; but the symptoms were of a less open and decided character. A late writer infers that the attack takes place, or that the disease is developed at the moment when its characteristic phenomena become fully manifested; but this opinion I cannot adopt until the evidences of its accuracy are adduced. In the Guzzerat fever, described by Gibson of the Bombay medical department, although the debility and extreme prostration occurred rapidly, nevertheless the disease is stated to have passed through its regular stadia.

Prognosis.—In forming our opinion of the probable result in a case of yellow fever, the age, constitution and residence of the patient, and the character of the prevailing epidemic, must all be taken into consideration. The symptoms which indicate an unfavourable result are a state of general depression taking place immediately upon the attack, or occurring suddenly at an early stage. The early appearance of a yellowness of the surface, similar, as Gilkrest remarks, to what occurs on ecchymosed parts, a line of yellowness from the nose to the pubis, or an olive or dark hue of the skin, is, likewise, unfavourable. Louis states that a loss of warmth in the extremities, with a relaxed and moist condition of the skin, occurs simultaneously with the black vomit. The other unfavourable symptoms are a weak, irregular pulse, deep sighing, severe pain, and an intolerable burning at the epigastrium and along the course of the œsophagus, and a shrivelled state of the hands, as in cholera. Suppression of urine was considered by Rush as a fatal symptom; a free secretion is not invariably, however, a favourable indication. Strangury is generally, but not always, favourable. A red protuberant eye, with dilatation of the pupil, is a very unfavourable symptom. The tongue being clean and red, or covered with a dirty brown fur, tremulous, or black and hard, with dark-coloured sordes adhering to the teeth and lips, is always indicative of danger. Hemorrhage from the nasal or buccal membrane, if it occur in the early period of the fever, is generally a favourable symptom. Vibices and petechiæ are, in the majority of cases, associated with great depression of the pulse and nervous system; still, like hemorrhage, they may be connected with a state of reaction. Incessant vomiting, and small whitish stools, having a sour odour, or bistre or clay-

coloured dejections, tenesmus, involuntary discharges from the bowels, are indications of approaching dissolution. Bloody stools, like the washings of beef, are generally favourable; but when black, grumous, and offensive, and associated with typhoid symptoms, they are decidedly bad. Gilkrest states, that an impacted state of the skin is always an indication of danger. A knitting of the eyebrows, a scowling, sinister look of the countenance, with an expression of horror when pressure is made upon the epigastrium, more jactitation, obstinate hiccup, subsultus tendinum, and the black vomit, are usually followed speedily by coma and death.

A state of pregnancy is always very unfavourable. "*Mulierem uteres gerentum mortu quopiam acuto corripi iefbale.*"—HIPPOCRATES. So, also, of the venereal desire.

A favourable prognosis may be founded on the pulse retaining sufficient strength after the third day; the skin becoming warm and soft; the vomiting, and the pains in the eyes, back and limbs, ceasing; the appearance of bile in the stools, which assume a greenish gelatinous consistence; and the occurrence of natural, quiet sleep.

Delirium, unattended with stupor, and a diffused pain in the head, are not to be considered as unfavourable symptoms.

When the fever is preceded by a decided rigour, the case is more hopeful than when no chill is experienced, the more malignant cases being seldom ushered in, as Rush remarks, by a cold stage. The tongue being covered with a light fur, indicates remaining vigour of constitution. The medical commissioners, Pariset, Francois, and Bally, who investigated the disease at Barcelona, in 1821, agreed that generally diffused, spontaneous sweats, with an abundant secretion of urine, were among the most favourable indications during that epidemic.

Anatomical Appearances.—In consequence of the settling of the blood towards the more depending portions of the body after death, the back of the neck, chest, abdomen, and the posterior portions of the extremities, assume a dark, purple hue, while the rest of the body is generally of a mottled, dusky yellow colour; and the scrotum, ears and extremities are of a darkish brown. A line of pale mottled yellow can be detected extending from the nose to the pubis. The muscles are dark and easily torn; the cellular membrane has a white, but unnatural appearance. These phenomena have led to the erroneous supposition that a rapid decomposition of the body ensues after death.

In the brain the dura mater is studded with dark spots and patches of lymph. A yellow serous effusion sometimes exists beneath the arachnoid. The substance of the organ itself is ordinarily firm, with increased fullness of its vessels. The choroid plexus presents often the appearance of a coagulum of blood. Dark-coloured blood is frequently met with at the base of the brain. Louis remarked, that in rapid cases of the fever the pia mater was deeply injected with blood, while, in the more chronic cases,

serous effusion was met with. Professor Harrison remarks, in the *New Orleans Journal*, that the lungs do not collapse as usual when the sternum is raised. These organs are usually found covered with dark-coloured patches, the tissues being here so completely infiltrated with blood, as to constitute, in many cases, a state of splenification. The heart, like the other muscles, is dark coloured and readily torn; coagula are frequently detected, especially in the left ventricle, which, in malignant cases, are very friable. The peritoneum has lost its smooth, silvery appearance, and has a dirty yellow colour. The mucous membrane of the œsophagus is often eroded, with the appearance, at its cardiac extremity, of a black matter, similar to that vomited, having oozed from its surface. Louis questions whether there is any connection between the burning sensation, experienced during life in the course of the œsophagus, and the erosion of its lining membrane, detected after death.

The stomach is usually distended with an inodorous gas, and contains a dark-coloured matter similar to that of the black vomit, more rarely, a pale viscid fluid, with dark-coloured flakes floating in it. The matter of the black vomit can, in some cases, be pressed out of small canals running beneath the villous coat. The vessels of the organ are usually gorged with blood, especially at the cardiac extremity, or its mucous membrane presents simply increased redness, of a rose hue, with streaks or spot of a purple colour in different directions along its inner surface. Abrasions and small depressions, as though a portion of the tissue had been removed, are often detected.

The congested state of the gastric vessels presents, not unfrequently, an appearance similar to that described by Seeds and others, as being met with in animals that have been strangled, or criminals who have been executed. It may hence be inferred, that the injection of the vessels, in cases of yellow fever, is due to a loss of contractility, in consequence of which they are unable to resist the entrance of an undue amount of blood, or to empty themselves when distended. The mucous membrane of the stomach is often mamellonated, but there is seldom any indication of thickening, softening, ulceration, or gangrene. I have met with softening in only one case; and Louis detected a thickening of the membrane in only two cases. Hepatization and sphacelus are mentioned by the latter, but by no other pathologist that I am aware of.

The same remarks as have been made in reference to the morbid appearances in the stomach, may be repeated in regard to the duodenum. The small intestines generally present similar lesions; their mucous surface is usually covered with a dark-coloured viscid mucus, and presents numerous arborescences of a yellow hue. Intussusceptions would seem to be of common occurrence in yellow fever. Gilkrest remarks that no ulceration of the glands of Peyer has been detected as in "typhus and other fevers

mali moris." In cases, however, assuming a typhoid type, enlargement and softening of these bodies have been present.

In the large intestines, especially the colon, the mucous membrane is often coated with a dark pultaceous matter. A pale, red fluid, resembling blood, is sometimes met with in their cavity; contractions of their calibre are occasionally present. On removing the black pasty matter from the mucous membrane, its surface is often found smeared with a substance resembling linseed meal and water. Louis witnessed, in one case, a softening of the colon, which was covered with an adventitious membrane.

The condition of the liver, both internally and externally, is various. Its colour may be either pale, reddish, brown, olive, yellow, greenish, or it may have the appearance of rotten cork. In children it usually resembles, in colour, pale box-wood. It may be hard, or soft and friable, crumbling between the fingers. It is often engorged, and, in some cases, anemic. Louis considers the pale anemic condition of the liver pathognomonic of yellow fever. According to Dr. Stewardson, of Philadelphia, in bilious fever the liver has a bronzed appearance externally, and an olive tint internally, which never occurs in yellow fever. The gall-bladder contains, ordinarily, its usual quantity of bile; Louis, however, says that it contains less than in other acute diseases; it is sometimes thickened, its contents being orange-coloured, or tinged with blood. The mucous surface is frequently punctated and covered with a granular sediment from the bile. It has been known to contain, in some cases, a grumous, tar-like, or ink-coloured fluid. The biliary ducts, especially, according to the observations of Stevens, the cystic, are sometimes impervious.

The kidneys are, occasionally, of a yellow colour externally, their substance congested, with minute abscesses in the papillæ, and pus in the ureters. The urinary bladder is generally contracted, its coats being thickened and indurated, and its mucous surface covered with yellow mucus, and dotted with small points. A substance resembling black vomit has been found in its cavity.

In cases of yellow fever terminating rapidly in death, no lesions have been observed: Louis states that in eight out of twenty cases, he met with no lesions to account for the fatal termination.

In regard to the black vomit, which has been considered pathognomonic of yellow fever, Professor Dickson states that he has met with it in cases of gastritis, enteritis, and in catarrhal and bilious remittent fever, in one case of varioloid, in two of dropsy, and in pregnancy; and the late Dr. P. G. Prioleau, of Charleston, South Carolina, states that he has met with the ejection of a matter resembling the black vomit in pregnant women labouring under no disease, and in a youth after extreme fatigue. I have seen the same occurrence in the moment of death from phthisis pulmonalis. In yellow fever the black vomit generally occurs in the second stage of the disease, though occasionally in the first. I have known it to occur within

thirty hours of the attack, and have heard of it occurring still earlier. In regard to its nature, Dr. Rush supposed it to be vitiated bile. Fordyce considered it to be an exudation similar to that producing the incrustations upon the tongue, lips, and teeth, in malignant fevers. The majority of physicians, with Dr. Physick, believe it to be blood, altered in appearance from certain morbid causes. Professor Dickson doubts its being blood, from having never met with it in hæmatemesis. Dr. Rhees, in a drop of black vomit, examined by the solar microscope, discovered an immense congeries of animalculi. Dr. Jackson asserts that he has traced it from the gall-bladder to the stomach, when the pyloric orifice was contracted. Louis believes that it may be produced by other surfaces than that of the stomach, having met with it in the intestines. Dickson has seen it in the bronchi, and by others it has been met with in the urinary bladder.

The black vomit varies in appearance, being occasionally grayish brown, chocolate coloured, or blackish, in some being as black as the secretion from the cuttle-fish. It has been compared to coffee-grounds, the liquor of pickled walnuts, &c. When examined with the microscope, it looks like smoky mica, and has its colour and feel. According to Louis, the deeper the colour of the black vomit, the more abundantly it is secreted. Dr. J. C. Nott, (*Amer. Journ. of Medical Sciences*, April, 1845,) considers the black vomit to be the blood acted upon by an acid, and that in proportion to the excess of the acid or the blood, the colour will be darker or lighter. Dr. Nott states that the black vomit effervesced when the carbonate of potass or ammonia was added to it. In the experiments which I have made, no effervescence occurred in a single instance. Bancroft declares that the black vomit is perfectly insipid, which corresponds with my own experiments. In only one-sixth of the cases of yellow fever which fell under my notice, were there any indications of acidity of stomach.

The appearance of the artificial black vomit, formed according to the plan of Dr. Nott, differs materially from that ejected from the stomach. The latter has a flaky appearance, like smoky mica; the former more of the coffee-ground appearance.

To a small portion of black vomit about four times the quantity of sulphuric ether was added, and then shaken together in a vial; the matter of the vomit floated on the surface, having the appearance of a dark cobweb or flake of dead matter. A portion of artificial black vomit being treated in the same manner, it immediately sank to the bottom, and did not again rise to the surface. Treated with a solution of the nitrate of silver, the black vomit was changed to a cream-white colour, every dark speck being removed, while the artificial substance retained its colour, being precipitated to the bottom of the vessel. An argument against the hypothesis that black vomit is blood changed by the action of an acid, may be drawn from the case of Dr. Fletcher, Dr. Nott's own patient, who, he remarks, was ejecting black vomit from the stomach, and discharging *pure blood*

from the bowels at the same time. Now, how is it to be explained that the supposed acid secretions acted upon the blood in the stomach and not in the intestines? The black vomit is doubtless a morbid excretion from the vessels of the stomach and intestines, and in this sense may be described as the blood changed in its properties by the diseased condition of the vessels.

Causes.—It is unphilosophical to refer a disease which, like yellow fever, is epidemic only at particular seasons and in particular localities, to causes which are in operation every year, and in localities where the disease never occurs.

That yellow fever is not produced by the action of marsh miasmata, must be very evident, from the fact that it is unknown at Rio Janeiro, but endemic at Vera Cruz, both places being nearly parallel in latitude, both built on a low sea coast, skirted by high mountains; and the religion, habits, and manners of living of the inhabitants of both being the same. Still, at Rio Janeiro, though encompassed by extensive swamps, and the inhabitants constantly subject to attacks of intermittent and remittent fever, the yellow fever has never been observed; while at Vera Cruz it occurs almost every year. In Honduras, bordering on the sea, and alternately boggy during the rainy season, or parched up during the severe droughts so common in that country, yellow fever never prevails, while intermittents and remittents are of common occurrence. In Demarara, with its low and swampy soil, its ditches, its stagnant water, abounding with vegetable matter in a state of decomposition, the whole constituting a true hot-bed of pollution, the yellow fever is unknown. Where are we to look for the sources of paludal miasmata as the cause of yellow fever in Bulam, surrounded by the sea, on the peak of Medina Sidona, on the Rock of Gibraltar, or in the beautiful and, apparently salubrious city of St. Pierre, Martinique? Carlotta, in Spain, a beautiful village, 1200 feet above the level of the sea, regularly built, well paved, and exceedingly cleanly, was nearly depopulated in 1800 by the yellow fever. Barcelonette, surrounded very nearly by the sea, and without any marshes in its immediate vicinity, was decimated in 1821 by this pestilence. We might also inquire why the yellow fever should not prevail in Calcutta, Milo, Algiers, and Constantinople, where everything would appear to be present necessary for its production, and yet commit such ravages in the well-regulated cities of Charleston, New Orleans, &c.?

Bilious remittent fever is met with alike in the swamps and rice fields of the Southern States, amid the fens of Lincolnshire, in Carthaginia, Savoy, amid the fertile plains of Lombardy, and in the island of Walcheren; but the yellow fever never prevails in any of these situations, a circumstance scarcely to be expected, if it depended for its origin upon the action of the same morbid causes.

It has been asserted that the prevalence of a high degree of atmospheric temperature is essential to the production of yellow fever, and a series

of meteorological tables has been adduced to show that the disease has not prevailed, excepting when the thermometer has ranged from 79° to 80° F. at 3 o'clock, P. M., and it has been supposed that the prevalence and malignancy of the disease are always in proportion to the degree of the prevailing heat beyond that just indicated.

Now, although the prevalence of a certain degree of heat is unquestionably necessary for the production of yellow fever, it is nevertheless true that the disease does not occur in situations and seasons marked by very high degrees of temperature. If heat alone were sufficient for the production of yellow fever, it is somewhat remarkable that it has never occurred in the city of Kingston, Canada, or in various parts of Russia, where the temperature of the summer is often beyond the degree supposed to favour its generation.

The supposition that the yellow fever is produced by a poison generated by the action of intense heat upon masses of vegetable or animal matter, in a state of putrescency, is equally untenable: all the circumstances supposed to be necessary for the generation of the poisonous effluvia, have been repeatedly present without the fever occurring; while, on the other hand, it has appeared and prevailed extensively, under circumstances where the materials for the production of this supposed poison could not possibly have had an existence.

The influence of an easterly wind has been much insisted upon, as a cause of this and other epidemics, and I believe with some show of reason. Johnson observed that the yellow fever was most prevalent, whenever the trade wind blew to some extent. These winds extend as far as 28° or 30° on each side of the equator, blowing from east to west; and on the coast of Asia and America, are sometimes felt as far as 40° . The yellow fever broke out in New York, in 1798, during an easterly wind. The epidemic at Gibraltar, in 1804, was by many referred to the same cause. The prevalence of easterly winds was observed by Barton during the prevalence of yellow fever at New Orleans in 1833, and by Kirkpatrick in Woodville, in 1844. I have observed the same thing during the epidemics of 1839, '42 and '43.

By a few writers, the yellow fever, in common with other epidemical diseases, has been referred to the existence of particular species of animalculæ, which exist in impure air, and by entering the circulation, give rise to disease. These animalculæ are supposed to be destroyed by pure air and water, and hence are found in the air of cities, but not in that of the country. But, if yellow fever were produced by animalculæ, why should not the acclimated be as liable to its attacks as the unacclimated, and why should children be less frequently attacked than adults, when we know that parasitic animals are more commonly met with in the first than in the last.

The peculiar condition of the air essential to the production of the yellow fever has not yet, and probably never will be, certainly ascertained.

Various causes, no doubt, tend, by producing a vitiation of the atmosphere, to augment the potency of the particular reigning epidemical constitution. But it is impossible by these alone to account for the occurrence of the various epidemics during particular years, and the confinement of many of them to particular districts or localities, or to explain the progress of the epidemic to its maximum intensity, and its more or less gradual decline and final cessation for a time. These circumstances, as well as the special character of each epidemical disease, must be due to some condition of the atmosphere, in addition to its state of impurity or intemperies; some specific morbid peculiarity appertaining to different sections of the globe, which, with the combined influence of heat, moisture, animal and vegetable putrefaction, electrical changes, the prevalence of particular winds, &c., develops, by its action upon the animal organism, local epidemics; the tetanus of Santa Cruz, the Barbadoes leg, the pellagra of Lombardy, the goitre of the Alps, &c. &c.

In looking over the map of the world, we see in countries north and south of the equator, but chiefly north, as far as 40° , three great regions of disease. First, of the plague; secondly, of the cholera; and, thirdly, of the yellow fever. If all the morbid circumstances were precisely the same in all of these regions, only one of the diseases named would probably prevail, but as there is a modification in these circumstances, there is also a variety in the character of the pestilence engendered.

Thus, from the equator to 20° north latitude, may be regarded as the true yellow fever region, embracing the West Indies, and the coast towns of Africa, the United States, Mexico, &c. From 20° to 30° in the eastern hemisphere, we find the valley of the Ganges, the principal centre of the cholera region, and from 30° to 40° we have the region of the plague.

The yellow fever being, therefore, endemic within the tropics, we can see no grounds for the belief that, when the fever makes its appearance in different portions of the same region, it is necessary that it should be exported from the one place to the other by the crews, cargoes, or foul air of ships.

It has been supposed that the plague, yellow fever, Asiatic cholera, and typhus fever are mere modifications in the character of one and the same disease, produced by the influence of the peculiar epidemic constitution of the atmosphere in different regions of the earth. In corroboration of this supposition, it is stated by Sydenham, that a disease similar to the plague occurred in London, and in 1771, a disease of a like character prevailed in Moscow in —, where it destroyed 80,000 persons. Again, a fever similar to the yellow fever has been observed in England and Ireland. Dr. Hamilton, of Lyn Regis, describes its appearance in Norfolk, and Graves in Dublin. The latter states that the symptoms and anatomical characters were the same as those laid down in cases of yellow fever by the best authorities. Sydenham describes the plague of London, in 1665, as having been ushered in by a malignant fever, which was nearly identical with typhus fever.

Dr. Armstrong states that a friend of his from the pest house at Constantinople, visited the fever hospital under his charge. He took him to the bed-side of a patient labouring under typhus fever, and asked him what he denominated the disease; he replied, the plague. I have myself met with at least a dozen cases of yellow fever in New Orleans, and Mobile, during the years 1833, '37, '39 and '43, that might with great propriety have been denominated cases of plague. They were marked by a low grade of fever, and attended with buboes, carbuncles, &c. The same thing was observed in New York, in 1798. Armstrong mentions a case of typhus in a female, attended with knotty glands, petechiæ, &c. Baron Larrey states his opinion that the plague and yellow fever are identical. Boot remarks that, the yellow fever, which is annually epidemic at Vera Cruz, becomes changed into typhus at Boston;—the two diseases occurring, the first in the south, and the second in the north, at the same seasons. He has seen the symptoms peculiar to each blended in the same patient.

If we examine closely the plague and yellow fever, we find a corresponding train of symptoms in both. The same anxiety at the præcordia; a similar expression of countenance; the shuddering; the pain of the epigastrium; the vomiting of dark fluids; hemorrhages; dark, bloody and offensive stools. We observe, also, that both have a predilection for towns on the sea-coast, and for similar conditions of soil, &c. We read of walking cases of the plague having occurred in the army of Napoleon. A similar parallel may be drawn between yellow fever and typhus fever.

Why the peculiar modifications of disease which we have supposed to be endemic in particular regions of the earth, should be occasionally met with beyond those regions, it is impossible to explain. It may be that, in consequence of the prevalence of certain winds, an unusual condition of the temperature and of the electric condition of the air, and perhaps of other changes connected with certain intestinal movements in the earth itself, the atmosphere of one region may undergo a modification approximating it, in its constitution and morbid influence, to that of another, and thus impressing upon the diseases occurring there the same character, as though they had originated in the latter. But everything in relation to this subject, in the present state of our knowledge, can be viewed only as a more or less plausible conjecture.

Nature of Yellow Fever.—By a reference to the account of the pathological changes observed after death, it will be perceived that upon them can be founded no positive evidence in proof of the dependence of the disease upon local inflammation. The increased vascularity and congestion of certain tissues, and the effusions which often exist, cannot with propriety be referred to as the products of inflammation. Stevens supposed that the poison producing the disease, causes a change in the condition of the blood, rendering it dark-coloured, and deficient in its saline ingredients, and making it to coagulate without a crust. These changes in the blood, when

present, I consider as rather the effect than the cause of the morbid actions set up in the body; they are not, however, invariably present; I have seen the blood coagulate as perfectly in yellow fever as in an ordinary intermittent.

With Gilkrest, I feel persuaded that it is upon the ganglionic and spinal system of nerves that the poison producing yellow fever primarily and mainly acts. This is evidenced by the morbidly augmented sensibility, the general malaise, acute pains, sudden prostration, &c., which often usher in the disease. The first effect of the morbid impression upon the nerves, is functional disorder of the several organs, which, if the cause be not removed, and the healthy action of the nerves restored by appropriate remedies, terminates finally in disease of the several tissues; the blood and other fluids of the body become changed, and a breaking up of the whole organism necessarily ensues.

Treatment.—The general indications of treatment are: 1st. To remove the febrile excitement, and thus prevent the supervention of local congestion and of lesions of the structures and fluids of the body. 2d. To guard against the occurrence of collapse; and, 3d, when the febrile excitement is reduced, to maintain the powers of the system. To fulfil the first indication, venesection has been strongly advocated by some physicians of very great eminence, and as strongly condemned by others of equal authority. Upon the whole, however, the weight of evidence is decidedly in opposition to the use of the lancet. That it may have been found beneficial in particular epidemics, is very probable, but I question very much whether, under any circumstances, the abstraction of blood will be found beneficial after the very first stage of the disease has passed.

Cold affusion, as directed by Professor Dickson, that is, immediately upon the termination of the chill, if there be one, when the face becomes flushed, and the surface preternaturally hot and dry, I have found, in the few instances in which I have tried it, to produce a beneficial impression. Whenever there is chilliness, dyspnœa, or diarrhœa present, the cold affusion is inadmissible. Cold applications to the head give much relief from pain, and are often otherwise useful. They are to be employed under the same circumstances as the cold affusion.

A remedy more generally applicable, even in the second stage of the disease, and attended always with less risk, is the warm or tepid bath. The patient should be allowed to remain in the bath from ten to fifteen minutes, during which time friction should be made to his body and extremities. (The Creoles use split lemons for this purpose.) Upon being taken from the bath, the patient should be quickly enveloped in a warm blanket, and put to bed. I have generally repeated the warm bath daily, so long as the strength lasts.

The exhibition of cathartic remedies is generally approved of; but to prove advantageous, they should be resorted to without the least delay. I

prefer as a cathartic, a combination of calomel and compound extract of jalap and colocynth, given in pills. If by these the bowels are not speedily relieved, injections are to be resorted to.

The Dover's powder has often the effect of moderating the heat of the surface, allaying nervous irritability, and inducing sleep.

Mercury, early administered, and in doses calculated to produce as speedily as possible, its specific effects upon the system, has been viewed by many distinguished physicians as a remedy, calculated, in the majority of cases, to arrest the fatal tendency. We believe that no other remedy has an equal influence over the disease, never having known a single case in which death has occurred after salivation was established.

There is, however, as Mr. Linton remarks, a condition of the gums produced under the influence of mercury, which is often confounded with ptyalism: the peculiar mercurial fetor is perceived, the gums become spongy and tumefied, the tongue clammy, and, as I have witnessed, ulcers form upon its dorsum, as well as upon the gums; and yet, what is properly termed salivation, does not exist. It is a question whether the condition of the gums just described, results from the action of the mercury alone, or is not rather a consequence of a morbid condition of the buccal membrane, consequent upon the disease. The latter I believe to be the most probable conclusion. Under the circumstances referred to, the remedy should be suspended, and stimulants, nutritive diet and frictions at once resorted to.

I rarely continue the use of the mercury to the extent of producing ptyalism. In the majority of the cases that fell under my care during the epidemics of 1839, '42, '43 and '44, I administered the remedy in such doses as were calculated to unload the vessels of the liver and alimentary canal, and found that all its beneficial effects were evidenced, when it produced a discharge from the bowels, of green, glairy, curdled, or jelly-like stools; convalescence soon ensuing, even when the specific effects of the mercury were not evinced in its action on the gums. I proportion the doses so as to produce free bilious evacuations. So soon as this result is effected, the tongue will, in general, become moist, the febrile heat less intense, and more equally diffused; the skin softer, and of a more healthy colour. When these indications of a solution of the disease are observed, the remedy should be discontinued.

I am accustomed to combine each dose of the calomel with a minute proportion of opium, or two or three grains of Dover's powder, to prevent its running off by the bowels. Should it purge too actively, without producing dark bilious evacuations, the amount of the opium should be increased, or the cretaceous mixture, with the addition of laudanum, administered.

After the bowels have been fully evacuated at the onset of the disease, I prefer that they should remain in a somewhat inactive condition, than incur the danger, by a continuance of purgatives, of inducing frequent watery stools, which are peculiarly unfavourable in yellow fever, often producing rapid and alarming prostration.

When dark, bilious, somewhat consistent evacuations have been procured, and a general amelioration of the symptoms ensues, I trust the case to the effects of the usual febrifuge medicines, the neutral mixture, &c. But, when the stools continue light, clay-coloured, or like cream, and the general symptoms are intense, indicating imminent danger, the safety of the patient can be secured only by pursuing the untrammelled course of Chisholm. In these cases the internal and external use of mercury should be resorted to, so as to produce as quickly as possible its specific effects upon the system.

With respect to the acetate of lead, so favourably spoken of as a remedy in yellow fever by Dr. M. Irvine, of Charleston, S. C., as well as by Dr. O'Halloran and others, my experience has been limited. I have generally employed it to arrest the hemorrhages which so often prove troublesome in the disease, and under such circumstances have been much pleased with its effects. The nitrate of silver, recommended by Professor Dickson, I have also found to be a valuable remedy in cases attended with hemorrhage, in the dose of one-eighth to one-third of a grain by the mouth, or in solution as an enema.

Blisters applied to the epigastrium in the early stages of the disease, will very generally produce a beneficial impression upon the symptoms. A blister along the spine, as recommended by Mr. Liston, will often relieve the irritability of the stomach, as well as the acute pains and jactitation which form such prominent and troublesome symptoms in this disease, and induce a calm refreshing sleep. Camphor blisters have been highly recommended, and are worth a trial.

The employment of blisters should be confined to the early stages of the attack. The practice of covering the body with blisters in the latter stages of the disease, with the view of exciting the action of the capillaries, is, according to my experience, one very seldom attended with success.

The irritability of the stomach is a most distressing symptom, and often prevents anything whatever from being given by the mouth. It is all important to allay it if it be in our power. The remedy which I have found superior to all others is the bicarbonate of potassa in solution; in some cases the solution of camphor in ether will be found very promptly to calm the irritable state of the stomach. The patient should be prohibited from taking anything in the form of drink; his burning thirst being allayed by portions of ice held in the mouth. If the irritability of the stomach be attended, as is often the case, with a constipated state of the bowels, a dose of castor oil or of croton oil may be administered, and will be found to produce less irritation and exhaustion than the mildest laxative we can administer. Saline cathartics are always to be avoided, after the first stage, from their tendency to produce thin, red, muddy stools, quickly followed by a tender and tympanitic condition of the abdomen, and irritation of the brain.

The supra-orbital pain is often very intense; for its relief cups to the nape of the neck, and leeches to the temples are frequently of no avail; more benefit will, in general, be derived from sinapised pediluvia with frictions to the lower extremities. The ice cap, or cold water to the vertex, may be employed at the same time; these means failing, a blister should be applied along the spine.

To prevent the collapse which ordinarily occurs, in severe cases, about the period of the second stadium, stimulants will be required. Great judgment is, however, demanded in deciding the proper period when they should be resorted to, as well as the extent to which they should be carried. When there are no indications of cerebral congestion, as a tendency to stupor, restless delirium, a hot dry skin, flushed face, deep suffusion of the eyes, red tongue, &c., I prefer, as a stimulant, under the circumstances referred to, opium, or some one of its preparations; it is particularly adapted to cases occurring in intemperate livers, which are marked often with symptoms of delirium tremens; here large doses of the opium will be demanded. One of the great advantages resulting from the use of opium at the period when indications of an approaching collapse occur, is the state of calm refreshing repose, which it has a tendency to produce, and which, when it occurs, results often in a state of hopeful convalescence.

From alcoholic stimulants, injudiciously administered, much injury frequently results. Their use demands the utmost judgment and caution.

In the congestive form of yellow fever, the safety of the patient will depend upon the promptness with which an energetic treatment is resorted to. Here, at the very onset of the attack, hot sinapised pediluvia, frictions to the surface, sinapisms to the extremities, epigastrium and spine, followed by bags of hot sand, and stimulating enemata, should be resorted to.

By many eminent practitioners, the sulphate of quinia in doses of from twenty to sixty or eighty grains, administered in the very commencement of the attack, no matter how high the febrile excitement may be, and when rejected by the stomach in the form of enemata, has been recommended as one of the most efficient means of controlling the more malignant forms of yellow fever. My own experience is not, however, in favour of the practice referred to. I have employed the sulphate of quinia in every stage of the disease, and in sufficiently large doses, but with very doubtful advantage excepting during the apyrexia, and in cases uncomplicated with any local determination. When injudiciously administered, it appeared to me to hasten the occurrence of the black vomit.

The various remedies that have been proposed as means of arresting the black vomit, as charcoal, chloride of sodium, tannin, creasote, tincture of cantharides, &c., I have found to be entirely inefficacious; and now never administer them unless to gratify the anxious desire of the friends of the patient, that something might be done to relieve an alarming symptom.

Mobile, Ala.

ART. VII.—*Researches upon the Structure and Functions of the Ciliary Processes.* By R. FRASER MICHEL, M. D., Charleston, S. Carolina.

WHILE among the litigated points of anatomy and physiology, there are many questions rendered particularly intricate from the numerous bearings which they present, there are others which require but the scrutiny of an anatomical eye to lead us almost naturally to the physiological inductions which appear to follow as the sequel. This is, perhaps, the nature of the examination into which we are about to enter.

While studying absorption, and believing from the concurrent testimony of several physiologists, and the plausibility of their researches, that the venous system plays a prominent part in the discharge of this important function, the eye presented itself to me, as an organ said to be totally deprived of lymphatics, and which seemed to furnish an example confirmatory of this assertion. The question arose, whether the eye really possessed any peculiar vascular arrangement which distinguished it in this respect from any other organ, as it was deprived of lymphatics for the accomplishment of absorption. A careful anatomical examination was instituted, by which I purposed to determine the relations which exist between the constituent parts of that organ, and their peculiarities of structure.

In undertaking this subject, and making references to those works which were inservient to my purpose, I found that I had engaged in a vast field already explored by those whose names are destined long to reign with oracular authority over anatomical questions. Indeed, the names of *Scamerring*, *Linn*, *Arnold*, and others, appeared to preclude the possibility of my determining anything positive with regard to this problem. But as from every subject, truth may be said to radiate like the beams of light in various directions, the hope has been encouraged, that it is given to every one to view it in some one of those numerous phases which may possibly have escaped the scrutiny of the imposing authorities whose names have been mentioned above.

Proceeding, then, without further preliminaries, to the discussion of a subject no less intricate than interesting, we will, for the facilities of description, and the more orderly exposition of the facts which support our views, comprise, what we have to say, under two sections: examining under the first head such parts of the eye, the complexity of whose structures fails not to attract our serious attention; and under the second, making such physiological inferences from the structure of these respective membranes, as may elucidate the functions they discharge.

As our remarks will therefore particularly bear upon the function of absorption, and the nutritive acts, as they are performed in the eye, attention will be almost solely directed to the *choroid coat* and its appendages,

the *iris* and *ciliary processes*, while the hyaloid membrane and body will also engage our time so far as they may be connected with the vascular arrangement of the organ.

After my first examination of an eye, prior to my attention being especially engrossed by this subject, I found that my impressions concerning the choroid coat were by far the most striking. I was no less impressed with that peculiar deposit—than which there is nothing more singular in the whole economy—investing the entire membrane, than that there should be so large a reticulum of blood-vessels in so small a space. Indeed, the vascularity of this coat is such, that the learned Prof. Cruveilhier justly remarks, that the words *choroid* and *vascular* are synonymous.

Of the general direction and relation of this vascular layer it is needless to speak, as this would be but reproducing what every elementary work on anatomy contains; but of its anterior termination and structure, concerning which there is such diversity of opinion, we will furnish some account.

Since the days of the celebrated injector Ruysch, the choroid has been regarded as composed of three distinct layers, which are readily exhibited when recourse is had to the proper modes of preparation. The outer layer, which is manifest to the unassisted eye on a choroid coat that has macerated a while, is formed of a multitude of blood-vessels held together by cellular tissue, and when examined with the lens, present a tortuous direction, running into centres whence radiate a number of convoluted capillaries. From the multiplied centres, the rendezvous of these arborescent ramifications, the vessels which are altogether composed of veins, have been called *venæ vorticosæ*, and contrast very strikingly with those of the layer beneath, which is made beautifully conspicuous when both are injected; the lamina immediately beneath is arterial, its vessels coursing lengthways towards the anterior part of the eye. This is the layer which was first so beautifully injected by Ruysch, and has since borne his name, *tunica Ruyschiana*. This part, when well injected, gives to the choroid coat the appearance of a sheet of gold; very excellent representations of this are given in Zinn,* and Sæmmering.† The next lamina which forms the inner part of the coat in contact with the retina, is not readily exhibited in the human eye, though in the sheep it is always easily demonstrated. This is the *membrana pigmenti*. After maceration, a separation of this portion is most easily effected by commencing at the tapetum lucidum, where the layer possesses the greatest thickness. Conveyed beneath the microscope, it presents the beautiful appearance of a hexagonal tessellated pavement; each hexagon being a cell in which the granules of pigmentum are secreted, that portion of its extent forming the tapetum being void of pigment globules, though the cells exist.

* Descriptio Anatomica Oculi Humani, Fab. iv. Figs. 1 et 2.

† Icones Oculi Humani; Explicatio Fabulæ quintæ, Figura septima.

Now after this cursory view of the several constituent parts of the choroid, let us examine the mode of their termination at the anterior part of the eye. Indeed, this is the question which it behoves us to examine, and its careful consideration will form the principal object of the present remarks.

The generally received opinion is that there is a mutual reception of the ciliary processes, iris, and ciliary ligament, and in such a manner we are told, as to allow of a ready separation of the iris from the rest of the choroid, upon a knowledge of which assertion, rests one of the operations for artificial pupil. But the exact mode of termination of these several structures, nay, even their exact nature, is by no means settled.

A signal illustration of the diversity of opinion on this subject may be found by perusing a work recently published by a distinguished physiologist of Germany, Rudolph Wagner, who, in speaking of the *ciliary processes*, calls them *muscular*, an opinion now professed by few, and which is certainly in formal contradiction with the result of my observations, as far as they have extended among several classes of animals, the sheep, ox, dog, cat, and in the human species.

Whatever be the mode of union of the *iris* and *choroid*, one fact may be easily established, which is, that the adhesions between the two are far more intimate than is generally believed. To convince one's self of this fact, we need but observe, in dissecting an eye, that the *choroid* and *iris* continue still to protect the humours after the removal of the *sclerotica* and *cornea*,—there is only a slight adhesion of the iris and choroid with the *sclerotica*. This connection appears to me to be of a ligamentous character, particularly in the eye of the bird, and in the sheep, where the anterior layer of the iris, which is clearly muscular, seems to give off a multitude of tendinous slips attached directly to the choroid, under the form of a circular white line, improperly called "*annulus gangliiformis, seu ganglion annulare*," by Sæmmering.* This is no ganglion, but a ligamentous tissue, deserving the appellation which it often bears of ciliary ligament, as it unites the muscular, or anterior layer of the iris with the choroid, just as the posterior layer, which I consider as altogether vascular, is directly continuous with that tunic. The pulpy appearance which the ciliary ligament may sometimes assume, is apparently due to the rupture of its slight attachments with the *sclerotica*, for this circumstance leaves a somewhat similar appearance upon the corresponding part of the *sclerotica*.

Such, then, is the nature of the ciliary ligament: a band of union between the muscular, or anterior layer of the iris and the choroid, adhering slightly to the *sclerotica*, but firmly to the choroid, from which it is torn, but does not naturally separate, in operating for artificial pupil. But the posterior layer of the iris is a direct continuation of the choroid, and there-

* *Icones Oculi Humani; Explicatio Tabulæ quintæ, Figura septima.*

fore essentially vascular; the blood-vessels of the latter running forward and downward, passing over and concealing the interior surface of the ciliary ligament, for which reason this structure is much less visible on the inner than outer surface.

This direct continuity of the framework of the iris with the choroid, explains the constant integrity of the two membranes after removal of the sclerotica, as they literally are one and the same. This direct continuation of the blood-vessels into the iris, is particularly visible in injecting the eye of a fœtus whose pupillary membrane still exists, as may be seen in the plates accompanying Jules Cloquet's monograph on this subject.* However, I may here observe, and would call particular attention to the remark, that all the blood-vessels do not pass into the iris. Of this I have had repeated opportunities of satisfying myself by injecting the arteries of the choroid tunic.

The ciliary processes, the nature of whose structure has been so variously interpreted, is positively vascular, and present so singular an arrangement of its vessels, that my surprise is great in observing the uncertainty of most authors on this subject. It is true that their nature, and the office they probably fulfil, were anticipated by ancient writers; but of this we have nothing but the most hypothetical accounts.

The first experiments which were performed on this subject, were by Ribes, in a series of essays published in 1814 and 1816;† and here I must acknowledge great assistance from the writings of this accurate and laborious investigator, many of whose researches I am proud to have been able to verify, as I am now more than ever convinced, they carry with them the stamp of truth.

Some of the many views entertained with reference to the function of the ciliary processes, were first, that they were destined to move the iris, or to fix the crystalline lens, over which they exerted that influence which allowed the eye to adapt itself to various distances. It was believed again, that they secreted the black pigment which invests the choroid and posterior face of the iris. It is needless to confute these assertions, for the muscularity of the iris, the *membrana pigmenti*, and the separation of the ciliary processes from the crystalline lens, are overwhelming arguments to the contrary. Moreover, as observed above, these remarkable structures are altogether vascular, the blood-vessels of the choroid coat extending directly into them in the most visible manner, and presenting one of the most beautiful appearances that can be exhibited from injections of any other part of the body. When, indeed, a ciliary process has been divested of that inspissated pigment in which it is disguised, and, placed on a lamina of glass,

* *Mémoire sur la Membrane Pupillaire, et sur la Formation du Petit Cercle Artériel de l'Iris.* Par Jules Cloquet.

† *Mémoires de la Société Médicale d' Emulation.*

is conveyed beneath the field of the microscope, we may distinctly discover the presence of a hollow canal, which, when it reaches the free extremity of the ciliary processes, affects a recurrent direction, coursing backwards parallel to the first, so as to form a perfect loop. Eccentric to this loop, there is a fringed arrangement of cellular tissue, which, indeed, may be distinctly seen with the naked eye. Now after a successful injection of coloured ichthyocolloids through the common or internal carotid, it will be found that the canal in the ciliary process is an artery derived from the arterial layer of the choroid coat. Again, if we inject by the jugular vein, (which is much less apt to succeed, owing to the fragility of the veins in the choroid,) the injection passes into the fringes of the ciliary processes. The vascularity, then, of these appendages to the choroid is evident.

Before we proceed to the inferences deduced from this fact, let me further remark that on no occasion have I found that the substances used in injections pass into the hyaloid membrane of the vitreous body. I have never consequently seen the hyaloid artery described by Cloquet and others, as passing through this humour to the posterior part of the lens, through the *arteria centralis retinæ*, easily and fully injected. In these respects do I fully concur with Ribes, who was no more successful in injecting the hyaloid membrane. It is true that, according to Hanover, the *canalis hyaloideus* is pervious only in new-born children, as he never could succeed in injecting it in adults. This would only explain the reason for Ribes' ill success as well as my own, but would in no wise interfere with the conclusions I am to draw, as the consequent obliteration of the vessels of the corpus vitreum is admitted.

Besides these ciliary processes described as dependencies of the choroid coat, there are a distinct series of similar structures connected, as I believe them to be, with the retina; though their presence has been denied by many authors, they are described by others under the improper name of ciliary processes of the vitreous body. They are by no means the depressions of the *Zonula Zinni*, which give that fluted appearance to the canal of Petit, which has led anatomists to term this part of the eye the *canal godronné*. With a good lens in a favourable light, the fringes of these ciliary processes may be distinctly seen, and they are also susceptible of being injected, though I am not prepared to determine whether the injection passes into them through the central artery of the retina, or from any immediate connection which may exist between them and the ciliary processes of the choroid coat. Indeed, there is a mutual reception between the processes of the choroid coat, and those of the vitreous body. It is evidently from this juxtaposition, that the latter became also invested with the pigment, and a communication between these two sets of processes seems very probable.

If I have supposed the processes of the vitreous body to be connected with the retina, it is from their attachment to the *zonula zinni*, which I re-

gard as a continuation of the arterial or internal layer of the retina. Many of my dissections justify this belief, and some microscopists have followed the nervous pulpy filaments of the retina along this part to the peripheral portion of the crystalline lens. I am inclined to suppose that it is through the zonula zinni that the capsule of the crystalline lens receives blood-vessels, and that these are derived from the retina, as there has often been an appearance of vascularity about the lens, without any traces of it in the vitreous body.

I am sorry that, while in accordance with Ribes, as regards the non-vascularity of the hyaloid membrane and vitreous body, I find that my observations must be placed in opposition with those of Cloquet and Müller. The latter particularly describes the hyaloid artery as passing through the vitreous body, furnishing to its membrane reaching the posterior capsule of the lens, upon which it is spent. He further mentions a fœtal structure, discovered by himself, under the name of *capsulo-pupillary membrane*, which also receives its blood-vessels from the artery.

Notwithstanding these authorities, I must continue in my belief that the humours of the eye are altogether transparent, being deprived of blood-vessels, which otherwise would intercept the rays of light, or at least materially interfere with vision. Regarding, then, the humours of the eye as completely isolated from the rest of that organ, being enveloped by their proper membranes, which, preserving the character of true serous membranes, are remarkable for their extreme tenuity and non-vascularity, the question arises: in what manner are secretion, nutrition and absorption effected?

Before replying to this question, let us observe that it is not very long ago since the function of absorption, supposed to be the sole prerogative of the lymphatic system, was disputed for by another order of vessels, whose important office was made known to us by the valued experiments of Magendie. This distinguished physiologist proved by a series of experiments, which we cannot here detail, that the veins positively absorb. Again he was conclusive in the further result that, during this process, the veins manifested a peculiar predilection for liquids, which were taken up with the greatest rapidity.

Now, taking the anatomical condition of the eye as the basis of a reply to the above question, and pointing out its alliance to the physiological fact just mentioned, we will at once discover a singular parallel between the office of the choroid coat, and that of the chorion enveloping the fœtus. Indeed, like this latter, the choroid is alone inservient to all the nutritive and secretory processes transpiring in the parts which it envelops, and this might almost be inferred from its extreme vascularity, and the peculiar distribution of its vessels, in those several appendages termed ciliary processes. These remarkable structures are organs of secretion. This will be readily understood, from what has been said of the central arterial loop, and the

venous fringes, which together form a ciliary process; for what would be the object of this extraordinary arrangement, were it not to realize some such important office in the vital operations of this perfect organ.

We can certainly imagine that the blood passing through these processes, is subjected to an operation, allowing the secretion of that aqueous fluid, which, by penetrating into the cells of the hyaloid membrane, will constitute the vitreous humour. Moreover, from the evident connection of the processes of the vitreous body with, and their penetration into the capsule of the lens, (a fact verified by Ribes,) we may readily admit a similar operation as going on in this place, which would explain the possibility of capsular cataract, while the lens itself is perfectly transparent.

Now, after the secretion of these humours, (perhaps even the aqueous also,) the fringed extremities of the processes being venous, will carry on absorption of the stagnant, or vitiated products as follows: the cellulo-vascular fringes of the processes of the vitreous body will pump up the vitreous humour, while, from the connection of these processes with those of the choroid, the former will receive in their turn the nutritive elements for the restorative process of secretion. The processes of the choroid, from their pendent condition in the posterior chamber, are admirably adapted for the absorption of the aqueous humour also.

Such, then, is the nature of the facts, which, though they might be dwelt upon more discursively, are sufficient, we deem, to prove that structures so vascular, were unquestionably destined to fulfil the high office which we have assigned them.

[While we have cheerfully complied with the request of the talented young author of the above paper, by giving insertion to his interesting researches, we must express our inability to yield our convictions to the correctness of the deductions he has drawn from them. The far greater rapidity with which absorption takes place in the anterior than in the posterior chamber, appears to us to be fatal to the hypothesis, that the ciliary processes are destined for the function of absorption.

Those who are interested in the minute anatomy of the eye, will find a most admirable account of it in Todd and Bowman's *Physiological Anatomy*, now in the course of publication. See *Med. News and Library*, for Sept. and Oct. 1847.—EDITOR.]

ART. VIII.—*Case of Partial Occlusion of the Os Uteri, during the third difficult labour of the Patient. Incision of the Os Uteri.* Read before the Boston Society for Medical Observation, October 19th, 1846. By CHARLES E. BUCKINGHAM, M. D.

MRS. R. F., was taken with labour pains, early in the morning of Sept. 21, 1846. She is a large woman, and somewhat fleshy; fair skin, light hair, blue eyes. Her first child was still-born, after a tedious labour, about three years since. Her second child, a female, whom I saved by artificial respiration, at birth, weighing nine pounds and six ounces, was born on the 21st of Feb., 1845, after a severe and protracted labour, followed by profuse hemorrhage, which was checked by ergot, and the application of cold douches, &c.

In this, her third labour, I was called at half-past-five o'clock, A. M. Found her in severe pain. A physician, who was present on my arrival, declared everything favourable in the case, and that the child would soon be born. The membranes broke about four o'clock, being the first symptom of labour. The pains were so severe as to prevent satisfactory auscultation. The fœtal head presented, with the occiput to the pubes; the left parietal protuberance being towards the os uteri. The os uteri was quite near the vulva, about the size of a dollar, with thin edges, perfectly unyielding, and feeling to the finger as if formed by a wire. At the right anterior part, there appeared to be a cicatrix, extending upwards and outwards. The vagina was perfectly moist and distensible. The fœtal head, I managed to push back during an interval between the pains, and, without success, tried to bring it into a more favourable position. Somewhat troubled by the state of the soft parts, against which the head did not as yet press, at a quarter of six o'clock I gave a grain of tartrate of antimony, and repeated it twice, at intervals of fifteen minutes. Its only effect was nausea. The patient had already flowed excessively. The head advanced slowly, the pains being very forcing, until six o'clock and eighteen minutes, when the head passed through the outlet, bringing before it the anterior part of the uterus, and resting upon the distended vulva. The perineum was stretched to the utmost; the pains continued forcibly; the os uteri was still unyielding, and the woman cried out,—“it has come out into me; I shall surely burst.” Ample opportunity offered for an ocular examination of the parts, and one of these terminations seemed inevitable:

1st. Rupture of the uterus into the peritoneal cavity. 2d. The passage of the fœtus through the perineum and rectum. 3d. Separation of the walls of the os and cervix uteri. Evidently no time was to be lost in sending for assistance. The question was, shall I wait for the head to tear its way through the natural passage, running the chance of its going in another direction, or shall I help it through with the knife? The nurse had left the room for a moment. I did not wish to call to her for my pocket case, nor could I leave the patient. Taking advantage of her temporary absence, for any disturbance might be injurious to the patient, and pressing the head back as much as possible during violent pains, I slid the blade of a lancet sideways within the os uteri, and slightly turning it, incised the posterior part to the depth of about one-eighth of an inch. The wound instantly enlarged of itself, and at two minutes after seven o'clock, the child was in the world. The cord was twisted twice about its neck,

and round between the thighs. There was some little difficulty in exciting the respiratory act. The placenta was soon afterwards born, and the uterus contracted firmly. The child, a male, was twenty and a quarter inches in length. The weight could not be determined. Pulse of mother at half-past seven o'clock, 80; no flowing. R.—Tinct. opii ʒij; syr. papaverum ʒij. M. Take ʒj every half hour, p. r. n.

7 P. M. Has taken ʒij of the mixture; no after pains; no flowing of any importance. Has not urinated; no evidence of water in the bladder. Pulse 84, full and soft.

22d. Pulse 66, full and soft. Has passed half a pint of urine. Lochia natural. No pains, nor tenderness; uterus well contracted.

23d. Pulse 72, full and soft. No defecation. Passes water freely. No pain anywhere. Uterus well contracted and without uncommon tenderness. Liquid diet. Set up last night contrary to directions. R.—Ol. ricini ʒss.

25th. 10 A. M. Pulse 80, urine free; lochia nearly ceased. Much pain in abdomen, following course of colon, which could be traced from cæcum down to descending colon, full of lumps and hard. Uterus rises more than half way to umbilicus; soft but slightly tender. Has not followed directions; has eaten freely of toasted bread; did not take the oil until seven o'clock this A. M., when she got ʒj. Has some nausea, probably caused by oil. (?) If she has no dejection before twelve o'clock, M., R.—Ext. colocynth. comp., hydrarg. submuriat., aa gr. vj. M. Two pills.

26th. 10 A. M. Oil operated thrice. Brought away much hardened fæces. At 4 P. M. yesterday, had a severe chill followed by fever, and great tenderness of abdomen, with nausea. Did not take the pills. Now tongue coated, white, not thick. Nausea; abdomen soft; no tympanitis. Took at nine A. M. ʒj of the mixture of the 21st with some relief. Colon not yet empty (useless to order an enema). Pain seems to be between umbilicus and uterus, more to the left, and apparently in small intestine. Pulse 108, not full, nor feeble. R.—Hydrarg. submur. gr. vj; pulv. opii gr. iss; ft. pil. No. vj. Take one, horis 6.

27th. Pulse 91; urine not so free as it has been; bladder empty; tongue not much coated; had some appetite, this A. M. Reports that she has taken nothing but gruel (?). Bad taste in mouth; slept well last night; complains that some tumour appears externally from the vulva; none discoverable; vagina hot; lochia have not ceased, and quite red; uterus quite large, and extending nearly to umbilicus; quite tender (and firmer than on the reverse) on left superior part of fundus. No tenderness in the course of the colon, which still contains fæces. Pain felt on the left side if pressure be made on the right side of uterus. No soreness about part incised on the 21st. No dejection since 25th. Has taken four of yesterday's pills. No nausea since. Omit pills till to-morrow. R.—Pil. colocynth. comp. ʒj; ft. pil. No. iv. Take two, and repeat p. r. n. in six hours.

28th. Pulse 84; urine more free; tongue cleaner; no nausea; bad taste continues. Tenderness continues, though less. Size of uterus slightly diminished; five dejections from four pills. Colon probably empty. May have gruel. Take the two pills of the 26th, with two hours' interval.

30th. 3½ P. M. Both pills were taken. Was easier on the afternoon and evening of the 28th, but passed no urine. During night had pain in region of bladder, but could not micturate. Had a chill at 4 A. M. yesterday, and was with difficulty relieved. In the morning, the milk had receded. The women report delirium (?) in consequence of which a priest

was called, who administered extreme unction, declared her almost dead, and in a fit of lucky stupidity advised an enema; half pint of oatmeal gruel was administered, which brought away fæces and probably some urine, with relief of pain. She slept from 12½ to 4¼ o'clock this A. M. The priest called to-day, to see if she were dead. Now, she is in a perspiration. Pulse 96; tongue cleaner than it has been; gums slightly tender; abdomen quite tender; bladder rises high above pubes. Drew off a quart of dark-coloured urine by catheter. Uterine tumour less firm than it has been. She shrinks from pressure, perhaps from fear of pain, which has left the lower abdomen, since the passage of the catheter. The milk is returning this P. M. R.—Enema limp. this P. M., and again in the morning. R.—Ext. belladonnæ ʒj; unguent. stramonii ʒj. M. Apply to the urethra p. r. n. Flaxseed tea, and rice water *ad lib.*

October 1st. Has had three enemata since my last visit, each of which brought away fæcal matter and urine. Did not sleep soundly. Constant pain in the loins, and headache. Still complains of prolapsed uterus, which does not exist, nor is there any tumour about the vagina. Lochia not tinged with blood. Bladder not empty. Catheter drew off two-thirds of a pint of high-coloured urine. Pulse 82; tongue slightly coated; milk has returned. Uterine tumour has subsided one-third; still painful to the touch on the left of the fundus; abdomen soft. Continue enemata, flaxseed and ointment. Soreness of gums abating.

2d, 10 A. M. Pulse 84; tongue cleaner; gums very slightly sore; no pain; slight tenderness of the left of fundus uteri; slept well; has passed no urine (?). Catheter drew off ʒij. R.—Spir. eth. nitrici gtt. xxx horis 4. Broth and toast.

3d. 11 A. M. Pulse 88; moderately full and soft; tongue moderately clean. Slept well last night; uterus still tender, but much diminished in size. Had at 8 A. M. a chill, probably from rising from bed. Relieved by warm drinks. Catheter drew off ʒxij of urine, not so dark-coloured as it has been. Continue medicine every three hours. Diet the same.

4th. Pulse 80, tongue clean; uterus slightly tender, but not larger than one's fist. Passes her water, but with difficulty. Catheter drew off ʒxij. Diet same.

From this time the catheter was not used. She grew slowly better, and was discharged comfortably well, on the 13th of October.

ART. IX.—*Radical Cure of Hernia by including the Neck of the Sac and External Ring in a Lead Ligature.* By J. C. NOTT, M. D., of Mobile, Ala.

THE subject of this case, aged about 50, was a negro man, under the professional care of Dr. Hicklin, of Mobile, of slender frame and delicate constitution. He had, for many years, been troubled with a scrotal hernia on the right side, and this malady had, of late years, been complicated with considerable enlargement of the testicle of the same side.

Dr. Hicklin requested me to see the patient in consultation, and, after a careful examination, I had no hesitation in concurring with him in the pro-

priety of extirpating the testicle, and suggested that the operation should be extended with the view of effecting, at the same time, a radical cure of the hernia. The doctor not only consented, but was kind enough, as the method proposed for the cure of the hernia was a novel one, to allow me to execute this part of the operation myself. No notes were kept by Dr. H., who had the subsequent management of the case; but the points to be elucidated are so simple as to require little detail.

The patient was operated on the 2d March last. Dr. Hicklin made an incision through the integuments extending from the external ring to the lower part of the scrotum; the spermatic artery was laid bare and tied; the cord divided and the testicle taken out in the usual way.

I then took charge of the remaining part of the operation. I extended the incision a little farther up, so as to lay bare more fully the external ring, which was cleared of cellular tissue. The hernial sac had already been opened, and a considerable portion removed with the testicle, to which it was adherent. I then passed a lead wire through the internal column of the ring, two or three lines from its margin and about four above the pubis, continued it down under the neck of the sac between the latter and the pubis, and brought it out through the external column at a point opposite to the perforation in the other column, the object being so to place it, as, when tied, the effect should be to draw together the two columns of the ring, and, at the same time, to compress the neck of the sac. A single knot was made, and with a pair of forceps the wire was twisted as tightly as so weak a material would permit. The opening was large enough to allow three fingers to pass into the abdomen, and I did not succeed in reducing it more than one-half. As the operation was a new one, and my preparations were made in haste, I could not do better than to stop here, close the wound, and trust to the subsequent inflammation and deposition of lymph which I expected to form around the ligature. The integuments were brought together with interrupted sutures, dressings applied in the usual way, and I hoped a speedy union would ensue.

Secondary hemorrhage, however, occurred in the night; the patient, who was not in condition to bear it, lost a great deal of blood. It was necessary to remove the dressings, open the scrotum, which was distended with blood, and although the hemorrhage did not appear to come from the cord, it was deemed safest (being in the night) to inclose it in a ligature; the hemorrhage seemed to come from the veins of the scrotum, and was relieved by cutting the ligatures—the wound was, therefore, dressed with lint and left to suppurate.

As might have been expected, the wound suppurated very profusely, assumed a very unhealthy character, and was about six weeks in closing. The suppuration extended the whole length of the wound, as high as the ligature, but there is no reason whatever to suppose that the latter had anything to do with the inflammation and suppuration which supervened; these were attributable to a bad constitution, excessive loss of blood, manner of dressing the wound, and bad nursing. Under other circumstances, it is probable the ligature would have been encysted without suppuration: there was no tenderness of abdomen, or any sign of peritoneal inflammation—some tenderness and pain existed in the course of the cord.

Being much occupied with other matters, I saw this patient but three or four times after the operation. The last time I saw him was about two months after the operation, at which time the wound had completely closed, except the point at which the ligature on the cord was still hanging out;

the patient had been walking about some three weeks, and there seemed to be no appearance of return of hernia—a hard, insensible lump occupied the seat of the external ring, where the lead wire was placed—there was every reason to believe that a radical cure was achieved. The patient left town, and I have not heard of him since.

I conceived and planned this operation many years ago, but have never before put it in practice, though I had confidence in its success.

To my friend, Dr. H. S. Levert, of Mobile, am I indebted for the principle on which it is based. At the time we were medical students together, in the University of Pennsylvania, (about twenty years ago,) acting on a suggestion of our distinguished Professor, Dr. Physick, he performed a series of extremely well-conducted “experiments on the use of metallic ligatures as applied to arteries.” These experiments were published in vol. iv., 1829, of this Journal, and, having witnessed many of them, I can answer for their fidelity.

Dr. Physick was led to the suggestion of leaden ligatures “by a knowledge of the fact, that bullets, buck-shot, and lead, would remain in contact with almost any tissue of the body, without producing irritation or unpleasant consequences, and that for an indefinite period.”

It is unnecessary to recapitulate here the numerous experiments of Dr. Levert. He applied lead, gold, platina, silver, gum-elastic, grass, (such as is used for fishing-lines,) silk, &c., to arteries, and the uniform result was that the metallic ligatures remained *in situ* without producing suppuration, and became firmly encysted, while, on the other hand, the vegetable substances as uniformly produced inflammation and abscess. The experiments were numerous, and varied in such a manner as to establish the facts, as far, at least, as dogs and sheep are concerned.

These facts are important, and it is strange that the profession should so long have overlooked them.

I think no argument is required to prove that my operation was justifiable on sound pathological principles. There is little to fear from peritoneal inflammation from injury done to an old uninflamed peritoneal sac, and this is, perhaps, the only danger which could occur. Where the testicle is not involved in the operation, care, of course, should be taken to avoid injury to the spermatic cord.

I recollect, some fifteen years ago, taking out a testicle in a very similar case, and a closure of the ring by subsequent inflammation, and radical cure of the hernia followed without a ligature around the neck of the sac and ring. I think it very probable that a cure would have occurred in the present case, also, without the lead ligature, as the inflammation and suppuration extended up to the ring; but still the important fact remains, that the ligature became encysted *in situ*. In cases of hernia, uncomplicated with disease of the testicle, the metallic ligature, or some other means, perhaps, more hazardous, must be resorted to to produce the adhesions necessary for obliterating the hernial opening.

This was a first operation, and, no doubt, experience will suggest salutary modifications. I was not able to approximate the opposite columns of the ring in this case as closely as I had hoped, and, in a second operation, I should not attempt to embrace both columns, but simply to pass the ligature under the neck of the sac, and through one of the columns as a *point d'appui*, to which the neck might be firmly fixed to guard against the formation of another sac.

Dr. Levert's experiments would go to show that a gold wire would an-

swer as well as a lead one; if so, I should infinitely prefer it, as the lead does not allow of the application of much force.

P. S.—Since writing the above, I have again seen the patient, four months after the operation. He is perfectly well, and has been at hard work, as a labourer, more than a month.

ART. X.—*Case of Erysipelas Phlegmonoides*. By E. J. BEE, M.D.,
Assistant Surgeon, U. S. Navy.

THE following case of erysipelas phlegmonoides occurred on the 13th of February, (1845,) while off Sisal. A. L. B., a petty officer on board the U. S. Ship Falmouth, was attacked with severe shooting pains about three inches below the patella, on the inside of the left leg. He felt the first pain about 11 o'clock, A. M., and at 6 P. M., was very lame, with some fever. Has neither strained, bruised nor injured his leg in any manner whatever. Felt perfectly well in every respect, until attacked by the pain below the knee. Has always been very healthy and robust. Is a strong muscular man, weighs about 200 lbs. Sanguineous temperament, and 33 years of age. R.—Mag. sulph. $\bar{3}$ jss.

14th. Much worse. Pulse full and strong. Cephalalgia. Has been delirious part of the night. About three inches below the knee, on the inside of the leg, there is a flat tumour of nearly the dimensions of the smallest sized common saucer. No fluctuation. Skin scarlet, with well-bounded edges, extending a little beyond the swelling. Redness disappears under pressure, but reappears immediately on the finger being removed. Had shooting pains in his left shoulder during the night. None this morning. Tongue clean and healthy. Countenance anxious. Salts operated freely. Vs. ad deliquium animi. Poultice. Rest.

15th. Less fever, and head feels easier; in other respects as yesterday. Had *curious* dreams during the night, and frequently awaked with a start. Ordered leeches to the tumour, and continue poultice.

16th. No better. Tongue clean. Cephalalgia. Bowels open. Ordered a mixture of potass. nit. ant. et potass. tart.; acid. citric. et aqua. Cold applications to head. Nocte $\frac{1}{2}$ gr. morph. sulph.

17th. Much easier this morning. Worse at night, with considerable fever and headache. R.—Vs. f $\bar{3}$ xii, and cup temples. Head much relieved by the bleeding and cupping. R.—Ext. belladonna one part; cerat. simplex two parts; ft. emplast. s. Apply to tumour.

18th. Feels better this morning. Much less pain in the tumour after the application of the plaster. Slept well. Swelling on inside of leg, about the same, but redness of skin nearly disappeared. Pain now on the outside of the leg, attended with some swelling and redness. No fluctuation, or throbbing. Pain burning. The inflammation of the skin extends some distance above and below the knee. Continue belladonna plaster to the tumour, and lead water poultices to the outside of the leg. Cannot bear warm applications. Leg much easier after being dressed. Nocte R.—Mass. hydrar. grs. vi.

19th. Less fever. Bowels open several times during the night. The in-

flammation of the skin on the outside of leg extends within eight inches of the ankle, and about ten inches below the trochanter major. Skin deep red; becomes pale on pressure, but immediately resumes the colour of the surrounding parts, when the finger is removed. No œdema or vesicles. Pits slightly on pressure on the outside of the knee. The boundaries of the inflammation abrupt. Apply cloths, saturated with sol. of sugar of lead to whole inflamed surface, and change them every hour. Anodynes at night, and poultice of pulv. ulmi and sugar of lead water to tumour on the inside of leg.

20th. Much worse. Inflammatory redness within nine inches of trochanter major, and six of ankle. The abscess on inside of leg was lanced last night, and discharged a very small quantity of thin, unhealthy matter. No fluctuation on the outside of the leg, though much swelled. This morning swelling very much increased, has a doughy feel, and there is evident fluctuation in it. Made freer incision on outside of leg, opposite the knee. Discharged more than f̄xviii of serum and matter. After matter was discharged, several sloughs remained at the opening. The sloughs of the fascia were not entirely separated from the muscles; removed them with the scissors. The muscles in sight were as completely separated from each other as if dissected apart, but were very high coloured. The abscess of the inside of the leg communicates with the one on the outside by a canal crossing the tibia below the insertion of the ligamentum patellæ. Pulse 130; small and quick. Sago gruel with port wine. Cold barley water for drink, acidulated with lime-juice. Cold applications to head. Cloths saturated with solution of sugar of lead applied every hour to whole inflamed surface. Tincture of iodine above and below the tract of inflammation. P. M. Made incision on the outside of the leg about half way between ankle and knee. Discharged freely a very thin unhealthy-looking matter mixed with sloughs. Quantity discharged about 1½ pints. Probe introduced at knee communicates with all parts of the abscess. The inflammation of the skin has nearly reached to the toes. The skin on the inside of the leg natural, except where the disease commenced. Bandage applied from the toes nearly to the hip. An opening made through the bandage at the several incisions to allow free exit to the discharges. Leg inclined from the hip downwards. Blister over hip just above the inflammation. The inflammatory redness of the skin has always preceded the formation of matter in the cellular tissue. Pulse 130. Cheeks flushed. Continue lead water and anodynes at night. Diet same. *Midnight*. Feels easy, and has slept well.

21st. Better this morning. Pulse 100. Small but less quick than yesterday. Tongue clean and healthy. Discharged f̄xvi of serum and pus. Redness has disappeared from all the leg below the lowest incision. Feels easier with bandage on than off. The skin on the outside of the leg, for several inches around the knee, is of a livid colour. Discharges thin and unhealthy. R.—Labarraque's disinfecting liquid 1 part; water 20 parts. M. Injected a pint of this mixture, which returned with several sloughs of cellular tissue and fascia. Continue bandage. R.—Tinct. cinch. comp. f̄xj mane et nocte. Diet nutritious. Porter. After dressing, pulse 88, and soft. *Midnight*. Sleeping.

22d, 6 A. M. Feels much better than he did last evening. Complains of his leg itching. Inflamed and somewhat œdematous around hip. Blister has drawn well, but the inflammation of the skin has crossed the tract of the blister, and is ascending the left side of the body; made incision just

below the trochanter major, to the muscles, but no pus. The incision bled freely, with much relief to the tension of the surrounding parts. Dressed blister, and administered anodyne draught. Continue same diet. *Midnight*. Feels easy, and has slept well, and without starting in his sleep. Leg itches. Less pain in upper part of thigh since incision was made. Pulse 86; soft, and not so small and thready as it has been. Tongue clean. Bowels open. Bandage continued, and leg depressed as much as possible.

23d. Better. Large quantity of matter discharged during the night. Repeat the injection of chlorid. of soda. Considerable matter came away with the injection, and several pieces of sloughs. Continue bandage; generous diet. Comp. tinct. cinchon. and ale. Is very weak. Has hectic fever, and night sweats. 8 P. M. Feels quite easy, and is disposed to sleep. Pulse 90, and smaller than this morning. Has much difficulty in urinating. Voids the usual quantity and without pain, but strains a long time before it will commence running. R.—Spirits nit. dulce f3j; tinct. opii gtt. ix. M. *Midnight*. Has slept well. Very little pain; pulse 82, and soft.

24th. Better. Very much inflammation around hip; and extends up the abdomen; enlarged the upper incision downwards. A small artery which sprung was allowed to bleed several ounces before it stopped. No matter discharged, but the walls of the incision presented in different parts of them the appearance of globules of pus. Leg below knee much better. Discharged about f3ss from lowest incision. Above knee much the same. Opening at knee discharged $\frac{1}{2}$ pint. Scultetus' bandage applied to thigh. Pulse 80. Half hour after dressing, pulse 84, and soft. 8 P. M. Pulse 90; soft, but smaller than in the morning; tongue clean; swelling and inflammation about hip less. No throbbing; leg feels more natural; cold poultice to hip. Not so much straining in urinating. R.—Sweet spts. of nitre and laudanum. 11 P. M. Feels easy and sleepy; has made water freely.

25th. Much better; appetite good; tongue clean. Pulse 80, and soft; one-half pint matter discharged from lower incision. Repeated the injection of sol. chlorid. sod.; complained of its smarting; several small sloughs came away with the injection; swelling and inflammation about hip much diminished. Chicken broth and a bottle of ale during the day. 2 P. M. Pulse 86. 10 P. M. Pulse 84; patient feels easy and disposed to sleep; leg itches exceedingly. Injected the lower half of the abscess with port wine and water in the proportion of f3j to the Oj. This injection brought away several pieces of sloughs, but gave him much more pain than the chloride of soda injection.

26th. Better; tongue clean and soft; pulse 88; full and soft. Leg pains him very little; made incision yesterday in the abscess to give exit to the matter collected in the lower part of it; appetite good and digests his food well. Bowels regular; continue the bandage, diet and porter; f3j comp. tinct. cinchon. bis die. Repeated the injection of a weaker solution of the chloride of soda, which smarted very little; can introduce probe made of gum elastic bougies from any one of the incisions to the others. The sloughs which came away with the injections to-day are smaller. 6 P. M. Easy; leg itches very badly; says he could tear it to pieces. The itching is in the abscess and not on the surface. *Midnight*. Easy, and has slept well.

27th. Less discharge this morning and from upper opening. Appetite good; tongue the same; pulse 80; matter nearly the same as that of a furun-

cle. No sloughs to-day; allowed to be propped up in his cot for half an hour. Same treatment continued. 3 P. M. Some fever; circumscribed flush on the cheeks.

28th. Better; pulse 80, soft; skin moist; tongue clean; appetite good; leg looks much better and itches extremely. The extent of abscess as marked out by a probe, consists of nearly all the outside of the leg and thigh, from the great trochanter to within two inches of the ankle. Injected a quart of weak solution of chloride of soda. Returned with some blood, but very little matter. This injection was thrown in immediately after withdrawing the probe; smarted him very badly; leg much emaciated. Continue treatment and diet. *Midnight*. Feels easy, and perspiring.

March 1st. Pulse 90; tongue clean; constant oozing from three upper openings. Cuticle peeling off from the leg as far as the inflammation extended; extent of abscess from ankle to hip, two feet six inches. No fever yesterday; leg well washed with Castile soap and water; tents introduced in all the incisions, and limb re-bandaged. Says he feels well in every respect; stop malt liquor and reduce diet a little. *Midnight*. Passed an easy day; no fever.

2d. Improving; itching very troublesome; voluntary discharge of matter gradually diminishing. No fever or sweats during the day or night. Pulse 72, and moderately full; bowels regular; leg much less than the other; face thin, but expression cheerful. Continue tents and bandage.

3d. Improving; small boils on different parts of his leg; cuticle has nearly all peeled off; can use leg without pain, but says he *is stung halt*. Small discharge from upper openings; tents and bandage continued.

4th. Pulse 74; no fever at night; extent of soreness very much diminished. Appetite good; bowels regular; no medicine.

5th. Feels very well; matter weeps slowly from upper opening. Lance boil on the calf of the leg, the others mere pustules.

6th. The upper incision discharges yet. Continue tents and bandage.

Tents, bandage, and rest were continued until the 10th, when he was permitted to walk about the deck on a crutch.

27th. Walks about during the day on his crutch; no stiffness of the knee, but can bear very little weight on his leg. Incisions all healed up. After being on his feet some time, says his leg feels large and heavy; general health very good. The bandage was removed from his leg gradually, from the top downwards.

Being on his feet, his leg swelled so much, that he was sent to the hospital, where he remained several months. Upon the return of the Falmouth, he rejoined her a strong, robust man. He was somewhat lame, but not enough so to impede his movements, or render him clumsy.

Remarks. For the above described disease, I am unable to assign any satisfactory cause. The patient was a very athletic man, of a robust constitution, and, as far as I could learn, not given to dissipation. It was his first cruise in a man-of-war. His health has always been very good, and was good to the very day of the attack. Throughout the whole course of the disease, there was no indication of disorder of his stomach or bowels. He slept under the top-gallant fore-castle, where there was a free current of air, and always with the left leg uncovered. The days were exceedingly warm, and the nights cool and very damp. This is the only assignable cause for the attack.

I wish to call attention to the beneficial effect obtained by injections of a solution of Labarraque's disinfecting liquid. The change for the better was almost immediate. The first injections gave the patient no pain, but after a few days they produced so much smarting that I only injected a part of the abscess at a time. I was induced to try the injection from Dr. Thomas Wells' recommendation of its use in empyema, as reported in the July number of the *American Journal of the Medical Sciences*.*

The bandage not only gave the patient great relief, but the inflammation of the skin very rapidly disappeared under its application. Also, by means of the bandage, I was enabled to keep the leg depressed to avoid the influence of gravitation causing the matter to approach more rapidly the body. Neither the tincture of iodine, nor blister exercised any power of arresting the progress of the inflammation. The inflammatory blush extended several inches beyond the boundaries of the abscess. On the left side of the body it mounted to within a few inches of the false ribs, embracing nearly half of the abdomen. It was during the time that the inflammation was at its height about the hip, that the patient experienced his difficulty of urinating. There was not the least appearance of inflammation in the immediate neighbourhood of the genital organs.

The incision near the hip was made without regard to the formation of matter in the cellular tissue. Although the muscles were exposed, no collections of pus were found, but the next day globules of pus could be seen in different parts of the walls of the incision. Afterwards, upon enlarging the incision downwards, the top of the abscess was met which discharged freely.

ART. XI.—*Case of William Freeman, the Murderer of the Van Nest Family.* By BLANCHARD FOSGATE, M. D., of Auburn, N. Y.

WILLIAM FREEMAN—the murderer of the Van Nest family—was a native of Auburn, Cayuga Co., N. Y., twenty-three years old. In stature he measured about five feet seven inches, and when in health weighed in the vicinity of one hundred and fifteen pounds. He had a broad chest, and was of muscular make. With the exception of a slight admixture of aboriginal blood, he was of African descent.

At the age of sixteen he was sentenced to five years' imprisonment in the State prison at Auburn, for grand larceny. It was long since conceded that of this charge he was innocent. His sentence expired in September, 1845. He left his prison conscious of the injustice he had suffered, and had imbibed an idea that he was entitled to pay for his time. This sentiment could not be eradicated from his mind, and on several occasions he

* I have since seen the same treatment recommended in Copland's Dictionary, (*Art. Erysip.*)

applied for warrants against those whom he supposed liable. Remuneration with him was the *one idea*. Failing in this mode of obtaining redress, he armed himself with a common butcher's knife, and a cane with a blade attached to the lower end, and from his lodging made his way toward the Owasco Lake, at about sunset on the 12th of March, 1846. After examining two or three premises, he finally selected the residence of Mr. Van Nest as the proper place to begin "his work," as he termed it, and there massacred Mr. Van Nest, his wife and one child, aged two years, and Mrs. Wyckoff, aged seventy. He stabbed Mr. Vanarsdale in the chest, who subsequently recovered. In the affray he entered every room in the house, both above and below, but took nothing away. He went to the stable, unfastened and mounted a horse, and was some rods from the scene of devastation in the incredibly short period of not more than five minutes from the time of entering the house, as was proved in evidence. Three days afterwards he was committed to Cayuga county jail to await his trial.

He was tried at a special session of Oyer and Terminer, July, 1846—first, as to whether he was sane at the time of trial, and secondly, on the indictment. A verdict of *sufficient* soundness of mind to be put on trial was rendered on the preliminary issue, and of wilful murder on the indictment. Subsequently, however, a new trial was granted by the Supreme Court. A trial calling forth so much talent in its prosecution, and arousing such fearful excitement among the people, is of rare occurrence.

On the part of the people, the cause was conducted by Hon. John Van Buren, attorney-general of the State of New York, and for the defence by Hon. William H. Seward, ex-governor of this State.

My knowledge of the prisoner commenced on the 16th of March, 1846, being the day after his commitment, and it continued until the completion of a post-mortem examination of his body on the twenty-first of August, 1847.

During the scene at Van Nest's, he received a severe wound in the articulation of the right thumb with the carpus—the artery barely escaping division. This circumstance saved the lives of other members of the family, because, to use his own expression, "he couldn't handle his hand any longer."

My services were required on account of this injury. In addition to the wound, I also found him entirely deaf in the left, and partially so in the right ear.

It was a singular circumstance that he never made an inquiry as to either the extent or condition of the injury, or the time necessary to complete a cure, or the prospect of recovering the use of his hand—though it was the right, and as a laborer was his main dependence. Neither did he complain of any sensibility in the wound, although the physical evidences of pain accompanying the inflammatory stage were such as to leave no doubt of its existence. In fact from the time of his commitment until the day of his death, although he often saw, and was attended by me through his last sickness, he asked only two questions, one about his medicine, the other regarding his diet, and these were made during his last illness.

During the principal part of his incarceration, he passed his time standing; his body erect—his head a little drooping, and with arms folded. He sustained this posture with statue-like stillness—indicating great muscular strength. He exhibited a calm, quiet expression of countenance, occasionally broken by a smile, which had the appearance of just bursting into laughter, but would quickly subside, leaving the same unalterable expres-

sion, as undisturbed as though a gleam of mirthfulness had never occupied his fancies. To the careless observer, it appeared as though he endeavored to suppress an irresistible propensity to laugh. This smile was never accompanied by any vocal sound, but often glowed upon his feature, regardless of time, place or circumstance, indicative of intense mental emotion. For this emotion he could never assign a cause. I say he never could, because, when asked, he always said he "didn't know." My conclusion is also based upon the remarkable fact, that on the trial *seventy-two* witnesses on both sides coincided in the opinion, that the prisoner did not intend to deceive in any reply made to the numerous interrogatories put to him.

His deafness increased until the sense of hearing was nearly, if not quite, obliterated. I doubt whether he heard any conversation for the last two weeks of his life; at all events, I could not get a reply that harmonized with my question.

On the twelfth of April, 1847, I was called to see the patient as being "not very well." He had a quick thready pulse—considerable cough, with free expectoration—not much appetite, but rather thirsty. He made no allusion to these symptoms, but directed my attention to his left ear, which discharged pus profusely. From this time forth, the aural discharge continued, accompanied by all the symptoms of tubercular phthisis, until his existence terminated, six days after the chain that bound him to the masonry of his cell had been removed.

About three weeks previous to his decease, I observed a prominent protrusion of the left eye, and upon further examination there proved to be an entire obliteration of vision. He could not close the lids over it, for they, with all the muscles of that side of the face, were paralyzed, and the mouth considerably drawn to the right. The cornea of both organs had much the same appearance. The loss of vision, I am inclined to think, was the result of functional, not organic, lesion. The protrusion depended most probably upon the loss of muscular power in its motor apparatus, in common with the muscles of that side of the face. The globe, in *articulo-mortis*, recovered in a great measure its natural location, as did the paralyzed muscles of the face—a common occurrence of facial distortion from nervous lesion at death.

Owing to insufficiency of light in the cell, but more particularly to the shattered condition of the patient—being deaf, almost blind, and nearly speechless—no satisfactory account of symptoms or the effect of remedies could be obtained from him.

As this case presents points of interest in many particulars, I would remark that phrenologically, Mr. Fowler says, "he is very defective in the mental temperament, and has great predominance in the muscular. His propensities (with the exception of self-esteem and firmness, very large—and combativeness and destructiveness, large) are all small, and have but little influence. The intellectual faculties are not so small, yet the quality of brain considered, their influence is quite limited. He has one of the most imperfect developments of brain I ever saw. He has no real balance to his mind; it is entirely one-sided, he being at the mercy of circumstances, and the stronger propensities." (See *Phrenological Almanac* in press for 1848.) Another phrenologist, though of less notoriety, has allowed him a much better development; but whatever the external evidences of mind the contour of his head may denote, they all have reference to a healthy brain.

I have measured his cranium in two ways: First, by passing a string across the frontal and around the spinous process of the occipital bones. It measured, in the greatest circumference, twenty-one inches. Secondly, after the directions laid down in Combe's phrenology by Callipers.

Viz. from occipital spine to individuality	7 $\frac{3}{8}$	inches
“ occipital spine to ear	4 $\frac{1}{8}$	“
“ ear to individuality	4 $\frac{8}{8}$	“
“ ear to firmness	5 $\frac{3}{16}$	“
“ destructiveness to destructiveness	5 $\frac{3}{8}$	“
“ cautiousness to cautiousness	4 $\frac{7}{16}$	“
“ ideality to ideality	5 $\frac{1}{8}$	“

On proceeding to a post-mortem examination, the body was found extremely emaciated. The costal and pulmonary pleura, though easily separated, were extensively adhered, and the lungs were an almost entire mass of disease. Tuberculous matter was interspersed with abscesses throughout the whole organ. The pericardium contained about one and a half gills of serum. The heart contained polypi, but had a healthy appearance. Liver natural. Gall bladder a little distended. Mucous membrane of the stomach slightly inflamed. Intestinal mucous coat healthy. Mesenteric glands tuberculous. Urinary bladder distended. Kidneys natural. The peritoneum appeared healthy, but the sac contained some fluid.

Upon opening the cranium, the bones were found rather thinner than ordinary, particularly for a colored subject, and the dura mater was adherent to a portion of the occiput. The anterior portion of this membrane was congested and inflamed, with considerable serum between it and the arachnoid. This latter tunic was somewhat thickened and congested. The anfractuositities of the right hemisphere of the cerebrum were filled with serum. The superficial vessels of the right anterior lobe highly congested on the superior surface. Cerebellum to all appearance healthy.

The whole brain, separate from the dura mater, weighed 43 $\frac{3}{4}$ ounces avoirdupois. Cerebrum 38 ounces. Cerebellum 5 $\frac{3}{4}$ ounces.

On section of the medullary substance, it was found thickly studded with bright red points. The right thalami appeared to have undergone some change, and the whole superior brain was more or less congested. The membrane covering the petrous portion of the left cavity was congested, and the remaining parts of it appeared healthy.

There were caries of the inner part of the petrous portion of the left temporal bone. The membrana tympani, with the internal structure of the ear, mostly obliterated. There was a necrosis containing fetid pus, having no perceptible connection with the external ear.

Remarks.—The important question connected with this subject is, whether the pathological state of the brain, its membranes and the ear, is one of long standing or of recent occurrence? On this point rests the physical evidence of the prisoner's accountability. If by possibility it could be determined that the organ of mental manifestation was without disease when the crime was perpetrated, then depravity unparalleled must be assigned as the only cause; and if so, the disease of the organ at his decease could not be held in extenuation of his crimes.

That the diseased condition of the brain was of long standing, appears to

be unquestionable from the fact, that the mental organ could not sustain so great a lesion as the autopsy presented, without the mind having exhibited sudden and violent derangement, as well as other symptoms which accompany its acute diseases. This, however, was not the case. He never complained of, or exhibited the ordinary symptoms in such instances, nor ever gave evidence of any mental change whatever; but on the contrary, presented the same characteristics throughout. During his last sickness, there was not a single symptom indicating acute inflammation of the brain, and yet, on examination after death, there were abundant and unequivocal evidences of inflammatory action there.

The disease of the ear also was chronic, and dated its commencement some months previous to the commission of the crime. On his trial it was proved in evidence that about two years previous—when an inmate of the state prison—he was struck on his head with a board, the blow splitting the weapon into fragments. He attributes his deafness to this cause, or, to give his own description, “it knocked his words down his throat—his ears dropped down—his kernels (meaning the tonsils) dropped.” Now the infliction of this blow upon a thin skull, associated with his own account of its effects, would lead us to conclude that the concussion seriously injured the auditory apparatus. It possibly burst the tympanum, and if so, it opened a communication between the external ear and the fauces, which induced the remark that “it knocked his words down his throat,” &c. Is it not a just conclusion, that from this injury the diseased action was set up which ultimately involved the whole brain?

Whether the facial paralysis was the result of cerebral congestion, or whether it was owing to a diseased state of the nerves of motion in connection with the condition of the ossa petrosa, may be questionable, because the nerves, as they passed off the brain, were apparently healthy; but the right hemisphere of the brain being the most deeply implicated in the organic derangement, the paralysis would appear, as it did in this case, in the muscles of the opposite side.

It should not be forgotten, that the deceased had passed through scenes of blood seldom equaled, where but a single individual was the aggressor; that he had been surrounded by the wild fury of an enraged populace for hours; that he had been chained, and for a portion of the time bedded upon the stone floor of a dimly-lighted cell, for almost eighteen months; suffering the jeers and grimaces of inhuman and uncounted spectators; wasting by the slow process of consumption; sustaining the blight of one physical energy after another; with little compassion and less than ordinary attention; and through the whole period, having scarcely asked a question regarding either friend or foe, soliciting no favour, showing no hatred, exhibiting no remorse, entering no complaint, and through all, sustaining an *undisturbed tranquillity*.

From this concatenation of circumstances, this unruffled, equable,

almost idiotic state of mind, that no external relation could disturb, or internal influence alter, we can scarcely come to any other conclusion by pathological reasoning, than that the state of mind which he exhibited subsequent to his arrest, depended on a chronic derangement of the mental organ, and must have existed antecedent to the crime itself. If such a combination of pathological facts, and all the other circumstances attending the prisoner from his arrest to his death, do not establish an unsound state of mind, they at least present one of the most extraordinary cases furnished by the annals of our race. Such a case demands the careful consideration of the philosopher and jurist.

How much the cause of justice and philosophy is indebted to the unwearied perseverance of the eminent advocate who withstood the tide of popular indignation in conducting the prisoner's defence, is left for other hands to register; but true it is, that over prejudice and ignorance, science has gloriously triumphed.

Auburn, N. Y., Sept. 1, 1847.

REVIEW.

ART. XII.—*Report on the Fever at Boá Vista.* By Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their Address of the 16th of March, 1847. London, 1847. Folio, pp. 112.

Letter addressed by SIR WILLIAM PYM to the Lords of the Council, relative to a Report on the Fever at Boá Vista, by Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their Address of May 14, 1847. London, 1847. Folio, pp. 16.

BOTH of these documents are of a highly interesting character. That of Dr. McWilliam presents a mass of evidence, of apparently an unexceptionable character, which establishes the fact that a febrile disease of a very malignant type, may be introduced among a community by the arrival of a vessel with an unhealthy crew,—the disease infecting those who have intercourse with the sick, spreading thus from place to place, and finally becoming general by the multiplication of the foci of contagion. We cannot, however, agree with Sir William Pym that the facts adduced by Dr. McWilliam have finally decided and set at rest a most important and long-contested question, relative to the nature and history of *Yellow Fever*, more particularly as to its infectious power. Unfortunately we are presented in no part of the report with any accurate, or in fact, any detailed account of the peculiar symptoms, invasion, and course of the fever which prevailed at Boá Vista, and hence we are unable to form any opinion as to the identity of the disease with either the yellow, the Bulam, or the malignant intermittent fever of warm climates;—three forms of fever which are often confounded under the general appellation of yellow fever, though there are good reasons for believing them to be different if not distinct diseases. It is true, we are told, that most of the cases, in which the disease terminated fatally, were marked by delirium, retention of urine, and the vomiting of a dark-coloured fluid. But upon so loose an enumeration of symptoms no one would certainly predicate an important diagnosis, on the perfect accuracy of which will depend the truth of Sir William Pym's assertion, based upon the evidence in the report before us, namely, that the yellow fever is a highly infectious disease.

The facts communicated in the report, are, nevertheless, of an important character, so far, at least, as they present the data for positive deductions: they have been evidently collected with much care and industry.

The narrative in relation to the introduction of fever into Boá Vista, one of the Cape de Verd Islands, and its spread among the inhabitants of the several towns and villages of the island, is as follows:

On the 21st day of August, 1845, her majesty's steam vessel *Eclair* arrived at Boá Vista, from the west coast of Africa. Her crew were suffering from fever, which had first appeared early in the previous June, when the vessel was stationed at the mouth of the Shearbar River, and again broke out after she had proceeded to Sierra Leone, and remained

there for 18 days. Here the crew, in addition to other duties, were employed in clearing out the hold of the *Albert* steam-vessel, which had been engaged in the Niger Expedition, as well as that of their own vessel, and afterwards were allowed to go on shore, during the period of the rains.

When she left Sierra Leone, the *Eclair* stood to the northward, with the *Albert* in tow, and anchored at a considerable distance from the shore, where both vessels remained from the 28th of July to the 8th of August; upwards of twenty of the *Eclair*'s men being, in the mean time, still engaged on board the *Albert*, cleaning, and in other ways preparing that vessel for the service of the government at the Gambia.

The *Eclair* went into the Gambia on the 10th of August, and having delivered up the *Albert* to the authorities there, left on the 15th of the same month. On her way to Boâ Vista, she called at Goree to deliver dispatches, but was not permitted further intercourse with the shore. Meanwhile the fever was steadily gaining ground. In addition to those who were on the sick list when the vessel left Sierra Leone, three of the men who had slept on shore there, were attacked and died. A merchant from Sierra Leone, who was taking a passage, also died of fever on the 27th of July, and 15 new cases were added in August, before the vessel reached Boâ Vista, of which seven were eventually fatal.

On arriving at Boâ Vista, Mr. Kenny, an English surgeon, proceeded, by direction of the governor-general, on board the *Eclair*, to inquire into the nature of the disease prevailing among her crew; on his return, he reported that the disease was the common endemic of the African coast, and not of a contagious or infectious character. Upon this representation, the authorities at Boâ Vista, without further hesitation, granted the *Eclair* free intercourse with the shore. In the evening several bags of soiled linen were brought on shore, deposited for the night in one of the consul's store-rooms, and distributed the next day, among the washerwomen of the town. Shortly after the ship was at Boâ Vista, the crew were again employed in removing tanks, clearing holds, &c.

The number of fever cases continuing to increase, it was judged advisable to remove the crew from on board, to a fort situated on a small island at the entrance of the harbour; which was effected on the 31st of August. The healthy portion of the crew were also lodged within the walls of the fort, but in apartments separate from those of the sick.

"This small island lies in a direction about southeast and northwest, within the northern extremity of an extensive bay, on the western side of Boâ Vista, and is about half a mile distant from Porto Sal Rey, the chief town of that island. It is rather less than a mile in length, and under a quarter of a mile in its greatest breadth; and is composed of a basaltic base with a calcareous incrustation on the surface. On the north-eastern side the rock rises to the height of about fifty feet, with a tendency to the tabular form, and of a distinctly columnar structure. Towards the north-western end it gradually shelves down to the sea, and is margined by a conglomerate of broken and rounded fragments of basalt, pieces of coral and shells, held together by a calcareous sandstone. The fort stands upon a bare hill of basalt, from forty to fifty feet above the sea-level, near the southern end of the island. The whole building is in a state of disrepair, if not of dilapidation. Some sheds and huts, in a ruinous state, extend along each side of the yard, and were, it is believed, assigned to the healthy part of the crew. The house in which the sick were lodged, consists of two floors. The upper one, which contains one room, sixteen feet square, and two others exactly half that size, is well provided with windows, and is exposed to the breeze. The under floor is of the same dimensions as the upper one, but is somewhat differently arranged. The whole of this lower floor is close, hot, and miserably ventilated."

The disease in no degree abated after the sick were in the fort; on the contrary, it seemed daily to acquire fresh virulence. On the 8th of September the assistant surgeon died, and was replaced by a volunteer, the assistant surgeon of the ship *Growler*, which had arrived two days before from the coast of Africa.

On the 11th of September, the captain of the *Eclair* was taken ill, and conveyed at once to the fort.

The ship had now been just three weeks at Boâ Vista, and the disease, instead of being checked, as had been hoped, was daily gaining ground; not less than sixty fresh cases had been added to the sick list, and some deaths had taken place nearly every day. A consultation of medical officers being convened, recommended that the vessel and crew should proceed to Madeira, and in the event of no material improvement taking place by the time she arrived there, that she should go on to England. The whole of the sick were, therefore, re-embarked on the afternoon of the 13th of September, and the same evening the *Eclair*, in company with the *Growler*, sailed from Boâ Vista.

At the time the crew of the *Eclair* were landed at the fort, the gun-room midshipmen and warrant officers occupied a house in Porto Sal Rey. The necessary duties on board the ship were carried on under the superintendence of the first lieutenant. These comprehended the clearing of the holds, cleaning ship generally, and watering and coaling her. The first of these duties had been already commenced by the Kroomen of the ship, assisted by two white seamen. The operations of coaling and watering were performed with launches belonging to the merchants of the place, manned by mulatto and negro natives. These, it was at first understood, were not obliged to do duty below decks; nevertheless, of the forty who were employed upwards of a week on board, hoisting in coal bags and water casks, several assisted in cleaning, white-washing, and restowing the holds; most of them were, during some period, on the lower deck, and nearly the whole, including the launch men, were on board the ship the day she sailed, and after the sick had returned from the fort. The whole of the labourers on board and on shore, as well as the launch-men, 87 in number, went to their respective homes every night, except those from Estacia and the eastern villages, who generally slept at Porto Sal Rey.

The coal heap labourers, as well as the launch-men, mixed freely on the island with those of the *Eclair*'s people who were not on the sick list; but it does not appear that any of these, with the exception of a slave, who afterwards died, visited the rooms where the sick were lying. Dr. Almeida, from Porto Sal Rey, visited the sick once, as did also Mr. Kenny, frequently. A native occasionally brought supplies from the country to the crew, and he was very strongly suspected of having smuggled spirits into the fort. The consul's storekeeper, who superintended the launches on shore, and the soldiers of the guard, were the only persons belonging to the island who had daily intercourse with the sick crew.

Of the seventeen women employed in washing the soiled linen brought from the vessel on her first arrival, all but one were attacked with fever, and four died. Two were attacked late in October, five in November, two in December, three in January, and one not until some time in February. None of the deaths took place until fever was general in Porto Sal Rey. So that in none of these cases can the occurrence of the fever be fairly attributed to infectious matter conveyed by the linen.

The officers of the ship and their servants were daily in various parts of the town of Porto Sal Rey. The purser was, for some days, at the house of Mr. Kenny, the surgeon, and while there, was affected with a nervous disease. Some of the other officers, the captain's cook and other servants, were taken ill in the town, but immediately upon being attacked were sent to the fort.

During the early part of the stay of the *Eclair* at Boâ Vista, leave was given to the petty officers and a few of the sailors to go on shore. The seamen seemed to have resorted chiefly to the house of a man who kept a spirit store in Porto Sal Rey. It is remarkable that this man was attacked with headache and general fever on the evening of the day he was visited by the *Eclair*'s people; he was attended by Dr. Almeida, and seen by many of his friends during his illness, which lasted a fortnight. Among the latter were two females, both of whom had slight fever shortly afterwards. Both these women, however, had been visited by people from the *Eclair*. They soon recovered, and their illness, at the time, attracted no notice whatever.

When the crew took possession of the fort, there was stationed there a guard of three soldiers, who had occupied the fort already three or four days. The guard slept in front of the upper room occupied by the sick, and often went into it. The corporal had a headache two days after the sick were landed, which, at first, yielded to cooling fomentations. In two days more he and his comrades were relieved; he was still rather unwell, but making no complaint, was posted as a sentry at the barracks in Porto Sal Rey. He was, however, soon taken ill, and sent to his home in Pao de Varela, where he was confined some weeks. His case caused no alarm, nor was he attended by any medical man, further than being seen once by Dr. Almeida during his convalescence. The other two soldiers had also attacks of fever, the one three weeks or so after he left the fort, and the other not until fever was general in the barracks.

The second guard was on duty at the fort six or seven days; none of them were at all affected during this time. They, however, all had fever afterwards, of which one of them died.

The third guard appears to have been at the fort several days before and after its evacuation by the sick of the *Eclair*. The day the *Eclair* left, one was ordered, by the corporal, to sweep out the rooms which had been occupied by the sick, and all three went into the rooms on this occasion. On the day after the steamer sailed, the corporal was attacked with fever, and died in three days delirious, and vomiting a black fluid. One of the privates was similarly seized on the day following, and died on the fourth day with fever, delirium, and black vomit. Both these men were seen by Dr. Almeida when in *articulo mortis*.

A negro soldier, on duty with the second guard, was ordered to bury the bodies of the two men of the third guard who had died from the fever. He left his two comrades in the boat, and, stripping himself, ran up to the fort in a state of nudity, and there, with the assistance of the survivor of the third guard, and a negro soldier sent to attend upon the sick, rolled the bodies in quilts and carried them down to the boat, which transported them to the beach, about a mile and a half to the southward of the town, where they were buried in the sand.

The fourth guard was composed of native soldiers, viz., the man who buried the bodies of the two soldiers of the third guard, and two others.

The same boat that conveyed them to the fort, on its return brought the men who assisted in rolling up the bodies of the dead men to Porto Sal Rey; they were, however, not admitted at once into the barracks, but sent to a house in the upper and northern end of the town, which is a part of the district Pao de Varella. The soldiers of the fourth guard lived in a room next to that in which the sick of the Eclair had been. One of them was taken ill in the course of two days, and, strange to say, was at once conveyed to the barracks in Porto Sal Rey. The two others were, in the course of ten or twelve days, relieved from duty at the fort. One of them was taken ill with fever some days after he returned to the barracks, and died on the 26th of November. The other was also attacked, and recovered after a dangerous illness.

A fifth guard was sent to replace the fourth. One was attacked with fever three days after he had been there. The guard was then withdrawn altogether. Another of them was attacked in the course of three days.

In the town of Porto Sal Rey, the first case of fever appeared in the room adjoining that in which the two soldiers who were removed from the fort were lodged. These soldiers remained in this house about eight days, during which time they had many visitors. They were not laid up; but it is evident they had the germs of fever in them from the symptoms they manifested, and from their being soon after both attacked with fever. Both declare that they had brought nothing from the fort except the clothes they had on and a Portuguese flag. Their clothes were taken by the wife of a negro mason to be washed. The husband had been a visitor of the soldiers to whom the clothes belonged; he was attacked with fever soon after they returned to the barracks, as were also his daughter, niece and wife, but the latter not until the fever had become general in the town.

Two females who were next door neighbours to the soldiers were constantly with them, one of them acting as their cook. The latter was attacked with fever in the course of three or four days after the soldiers left, and died with high fever, delirium, and black vomit. She was taken ill about the 12th, and died on the 16th of October.

A mulatto who lived about twenty yards from the house of this female, was taken ill with the fever about the same time, and died on the 18th of October. He had not had any intercourse with the sick of the Eclair, but is suspected of having had a blanket and rug from that vessel in his possession. A mulatto woman who had visited the last-mentioned person, and the female who cooked for the soldiers, and lived next door to the latter, were attacked with fever, the day after the man's death, and died with the same symptoms as the female. A man who arrived at Boâ Vista from Madeira a few days after the departure of the Eclair, and had occasionally seen the man last referred to, during his illness, and afterwards carried his corpse and that of the female to Rabil for interment, was shortly afterwards attacked with fever, which proved fatal in a few days. A man who had attended this person during his illness, was also seized with the fever, and soon after died. His widow was likewise attacked, but recovered.

Two females who lived the second door from the cook, were both attacked and recovered; and a female who visited her was taken ill and died.

During the latter half of November, and throughout December, 1845, and a part of January, 1846, the disease was at its height in Porto Sal Rey, sometimes six or seven persons dying in one day. Meanwhile the gover-

nor-general, with his suite, several of the better class of Portuguese, and the whole of the English, with the exception of six, left Boâ Vista for the other islands of the group. A rigid quarantine was also imposed upon Boâ Vista. The whole of those who left the island are reported to have continued perfectly free from fever with one exception.

Mr. Pettingal, the arbitrator of the mixed Commission Court at Boâ Vista, who left the island on the 22d October, for San Nicolao, returned on the 11th Nov., under the belief that the disease had nearly if not altogether disappeared.

The family of this gentleman, consisting of his wife and daughter, were lodged for the first night on their return, with Mr. Macauly, and on the following day removed to their own house. A day or two subsequently, two mulatto girls, who, during the absence of the family, had been in charge of the house, were both taken ill with fever. One remained in the house three days after she was attacked, and was, during this time, frequently visited by Miss Pettingal. Both girls recovered; but six days after the return of the family to Boâ Vista, Miss Pettingal was seized with symptoms of fever, which, in forty-eight hours, was marked by black vomit and retention of urine, and terminated fatally on the seventh day. This young lady was attended during her illness by an English nurse, and constantly visited by her father, mother, and Dr. Kenny, her physician. The captain of an American vessel, who had been at Porto Sal Rey for some weeks, frequently visited the house during the daughter's illness, and assisted on one occasion in shifting the bed on which she lay, from one room to another. An English servant of Mr. Macauly, also assisted during Miss Pettingal's illness, and slept one night at the house. The latter was attacked on the 25th of November, and died on the fifth day with the most malignant symptoms of yellow fever, in the house of his master. The nurse was attacked about the same time, and died on the 27th of November, as was also Dr. Kenny, who died in Rabil also, on the 27th of the month. The American captain had violent vomiting two days after the death of Miss Pettingal, when he was put on board a small vessel, and conveyed to the adjacent island of Sal, with the view of joining his own ship. The authorities there, however, would not allow him to go on board or to land, and he died on his return to Boâ Vista, just as they were entering the harbour.

Two days after the death of his daughter, Mr. Pettingal, with his wife, embarked in a schooner, and sailed for San Nicolao. During the passage he seemed completely prostrated by mental, rather than physical suffering. The vessel arrived at San Nicolao on the following day, and was ordered to perform a quarantine of fifteen days, at a desolate part of the island; which greatly aggravated the despondency of Mr. Pettingal. He now complained of pain in his legs, which exhibited large dark-coloured patches, acidity of stomach, general pains and yellow suffusion of the eyes; hiccup and black vomit closed the scene on the 5th of December. Immediately after his death, the vessel returned to Boâ Vista, and landed Mrs. Pettingal there. On the passage one sailor died of yellow fever, and another went on shore ill at Porto Sal Rey, where he died of the disease.

By the end of April, 1846, Porto Sal Rey, as well as the residue of the island, was quite free from fever.

The total population of the island was 4395; of those 17 left, leaving 4378 exposed to infection; of these 311 died. The ratio of mortality was as follows:—

Amongst Portuguese, Spaniards, and French, who were exposed to the fever,				1 in 2:28
"	English and Americans,	"	"	1 1:60
"	Native population. Slaves,	"	"	1 33:4
"	" " " Free,	"	"	1 14:6
Average mortality of Native population,				1 15:4

On the 30th of May, it was reported to Dr. McWilliam, that there were some people labouring under suspicious symptoms at Moradinha, a village in which the mortality had been remarkably small during the prevalence of the epidemic. On proceeding to the spot, the Doctor found two persons, a girl of 14 years of age, and a man about 35, with all the symptoms of a most malignant fever.

The countenance of the girl, a dark mulatto, was of a dirty lemon-colour; shining through the natural darkness of the skin, it made it resemble very much that of a light bronzed statue. A very strong fetor issued from the body, which tainted the room and drove the Doctor and his attendants back from the door until the window was opened. She had complained much of pain along the spine, and still pointed to her head as the seat of pain. She had been bled in the arm by one of the neighbours, and all around the wound was of a greenish colour, swollen and putrid. In the angles of the mouth there was dark frothy blood. She had had black vomiting, but this symptom had for some hours ceased. The urine was black, as were also the fæces. The former had been voided in very small quantities. Pulse small, irregular. She had been ill seven or eight days.

The man had nearly the same symptoms, but in a milder degree; he had not been affected with black vomit.

By the directions of Dr. McWilliam, the patients were placed in as large a house as the village afforded—a temperature of 140° Fah. was introduced into all the houses; the clothes of two persons who had already died were burned; and the village was surrounded by soldiers, so as to prevent ingress or egress to all except the medical attendants. On the following morning, he found the girl just expiring; the man was not worse, and was reported to have rallied somewhat during the night. The nausea had in a great measure subsided under the use of small and repeated doses of quinine. The urine gradually became lighter, and increased in quantity; the headache was relieved, he took some nourishment, and was convalescent in five or six days.

Four other cases occurred between the 1st and 3d of June. In none of them was there black vomit; they soon passed from the continued to the remittent form, and all recovered under the use of quinine, mild aperients, and nourishing diet.

The first person attacked at Moradinha on this occasion, was a girl. She had visited the eastern villages on the 15th of May, and returned to Moradinha, where she was attacked with the fever on the 20th. Her mother who slept with her one night after she was taken ill, was attacked on the 26th, and died on the 29th. The girl seen by Dr. McWilliam, had visited the daughter during her illness, a short time before she was attacked.

The disease did not extend to Rabil, or any other of the villages, and on the 13th of June, the whole of the remaining patients were convalescent.

"Under ordinary circumstances," Dr. McWilliam remarks, "the fever which attacks ship's crews on the African coast is the common bilious remittent. Seldom,

if ever, has it happened that a disease characterized by black vomit has at once broken out in a ship. This malignant symptom rarely occurs, even on shore, except during some of the more severe epidemic visitations. Judging, therefore, from the result of general experience, as well as from the medical reports, it seems to me to admit of no doubt, that the disease which invaded the *Eclair* in the latter end of May and early part of June, 1845, was the usual endemic fever of the African coast, which, although a most fatal disease, is not considered to be of an infectious or contagious nature. The mental despondency which seems to have pervaded the crew rendered them indeed peculiarly susceptible of disease, not only while on detached service in the boats up the river, but also on board the ship (around which the commonly recognized causes of fever were in great abundance), and on this account it is probable that the fever was of a more aggravated type than usual.

"At Sierra Leone, the irksome and unwholesome duty of cleaning the hold of the *Albert*, as well as that of their own vessel, the unwonted exposure in some cases by day and night, the irregularities committed by men who had for some months been exposed to morbid influences, all combined to the development of a fever of a much more malignant nature than the usual endemic of the African rivers. Accordingly, several of the cases that occurred after the ship left Sierra Leone were marked by unequivocal black vomit—a symptom, as has been already mentioned, extremely rare in the endemic fever, and regarded by all who have served in hot climates, as a test of unusual malignancy. It is thus quite evident that the type of the fever changed materially for the worse during the passage from Sierra Leone to the Gambia and Boâ Vista. There is also great reason to believe that it acquired still greater virulence while the crew were at the fort. The house in which the sick were lodged there contains only one room at all well ventilated, and judging from the evidence of Dr. Almeida, they must have been much crowded; at all events, the fact is beyond doubt, that the accession to the sick list and the mortality became much greater at this than they had been at any previous period. In short, from the endemic remittent of the African coast, the disease had, from a series of causes, been exalted to a concentrated remittent, or yellow fever.

"The European soldiers who were attacked with fever so soon after the departure of the *Eclair*, had arrived from Portugal in August, 1844, and had been performing the usual military duties of the island, which are by no means of a laborious nature. They had never been on board the *Eclair*. To state with great precision what their symptoms were is not in my power, for they were not seen by a medical man until in *articulo mortis*. The account, however, of their negro comrades, although brief, emphatically shows that the disease of which they died was an intensely malignant fever. They had general fever, delirium, and at last black vomit. The same description belongs to the fever that afterwards broke out on the Island of Boâ Vista. Dr. Almeida, who was present during the early period of the epidemic, and Messrs. Moraes and Leao, surgeons in the Portuguese navy, who arrived in February, informed me that in the majority of the cases there were yellowness of skin, suppression of urine, and black vomit. The two former symptoms existed in the cases I saw at João Gallego in April, but there was no black vomit. Suppression of urine was so common a symptom, that it has been mentioned to me by all classes with whom I spoke on the subject of the fever. It is worthy of remark, that according to Louis, this was an extremely rare symptom in the epidemic at Gibraltar in 1828. It seems then hardly to admit of a doubt that the disease with which the crew of the *Eclair* were afflicted, that which proved fatal to the European soldiers at the fort, and that which soon afterwards prevailed on the Island of Boâ Vista, were identical.

"I have already endeavoured to account for the malignant character assumed by the fever among the people of the *Eclair*, but it still remains to be shown how the soldiers, natives, and other inhabitants of Boâ Vista became affected with a similar disorder.

"In the present state of our knowledge regarding the telluric origin of disease in warm climates, it is hard to say what kind of soil may not generate fever, but the position of the fort, on a bare basaltic rock, the dry calcareous surface of the

small island generally, its extreme aridity and free exposure to the trade breeze, would lead one to suppose that fever was at all events not likely to originate there. But the soldiers had only a week before they were seized with fever, come from Porto Sal Rey, where, at least in a theoretic view, the condition of the soil, during and after the rainy season, is such as may cause fever. Assuredly many bad fevers have been attributed to less obvious causes. At Rabil, which is rather less than four miles distant, the existence of a cause is not only theoretically but practically apparent. In the neighbourhood of the Ravine there, remittent fever does occasionally affect the residents, and has, during some seasons, assumed a severe and fatal form, as in 1821-'22, 1827 and 1833.

"Now, if the fever that raged among the Eclair's crew was primarily the remittent of the African coast, aggravated by circumstances to an unwonted degree of malignancy, it is quite reasonable to believe that a fever of equal intensity might be grafted on an endemic of the same nature originating in the Island of Boá Vista, whose geographical position is within the legitimate domain of yellow fever.

"If, then, the existence of a practically efficient, as well as of a probable cause of fever on the island be admitted, it now only remains to be seen whether there is reason to suppose that either was in operation at the period in question, for if such were the case, the arrival and stay of the Eclair at Boá Vista, with fever among her crew, and the almost contemporaneous occurrence of a similar disease on that island, can only be regarded as mere coincident events. If, on the other hand, it does not appear that any local cause of disease was at this time in action, either on the small island or on Boá Vista itself, and if the subsequent history of the fever proves it to have been capable of propagating itself, then, under all the circumstances, there will be strong grounds for concluding that the visit of the Eclair, and the invasion of Boá Vista by fever stand in the relation of cause and effect.

"While the Eclair was at Boá Vista there was occasional rain, and the thermometer ranged from 80° to 84°; it does not, however, appear that the flat behind Porto Sal Rey was inundated until after the fever broke out in the town. Dr. Almeida, while he admits that remittent fever occurs in some seasons at Rabil, declares that he never knew it to originate at Porto Sal Rey, and his experience extends over thirty-seven years. The same gentleman asserts that the island was quite healthy until some time after the departure of the Eclair, and in this he is borne out by all with whom Dr. McWilliam communicated on the subject. Mr. Macaulay says that 'Boá Vista was free from any kind of sickness prior to the Eclair's arrival, as well as during her stay there, and for a short time after her departure.' Again, 'Boá Vista is a remarkably healthy place, and fevers are almost if not entirely unknown, amongst the established residents, or amongst the strangers.' And Dr. McWilliam states, that since February, 1844, neither in the family of the British Arbitrator, which consisted of five English persons, nor in the family of the British Consul, which consisted of eight English persons, nor in the Doctor's family, which consisted of six English persons, nor among the other English residents, did a single case of fever occur, prior to the appearance of the disease to which the report before us specially refers. The instance of the consul's family is a very strong one, for they had lived in the island for seven years, without suffering in the smallest degree from the climate."

Dr. McWilliam was unable, after the most minute and repeated investigation at Porto Sal Rey, Rabil, Estacia, as well as the eastern villages, to discover that there was disease of any kind on the island, until after the arrival of the Eclair. If, to testimony such as this, be added the fact that Moradinha, which is situated in the Rabil ravine, and Estacia de Bains, which overlooks it—both of which places have always come in for a great share of remittent fever, whenever that disease was prevalent—were, in a most unaccountable degree, exempt from fever during the epidemic to which the present report refers, then it must be evident that no apparent source of the disease is to be found on the island, but must be looked for among the sick crew of the Eclair.

If, then, the absence of all local cause on the small island, and the identity of the disease which proved fatal to the two European soldiers at the Fort soon after the departure of the *Eclair's* people, and that which occurred in the crew of that vessel, be admitted, the necessary conclusion is, that the fever was propagated to the soldiers, either directly by contagion from the bodies of the sailors, or by an infectious matter left in the room which had been occupied by the sick crew. The same reasoning applies to the Island of Boâ Vista, to which it seems, beyond any doubt, that the fever was conveyed by the negro soldiers, and by them transmitted to the female and their other visitors at Pao de Varella. The disease was for some time confined to these visitors, and to the immediate neighbourhood where they lodged, and it is remarkable that the only two Europeans inhabiting the same row of huts with the soldiers both died of the fever. From Pao de Varella the fever can be traced through sources of infection to the lower part of Porto Sal Rey, eventually including nearly the whole of the population that remained in the town.

At Rabil the case was the same as at Porto Sal Rey. A labourer on board the *Eclair*—and who was very strongly suspected of having had in his possession a coverlet and blanket from the fort—was taken ill at Maradinha, and remained there some days in a house of a person who, together with his wife, was attacked with fever three weeks afterwards. The labourer was carried to his own house in Cabeçada, where there was not a single case of disease of any kind. In a short time his whole household, consisting of his wife and three children, were attacked, and speedily fell victims to the fever. From this house, as from a central point, the disease spread in all directions, more especially to the southwest and most densely populated part of the village.

When the disease extended to the villages near the eastern and western extremities of the island, and had to traverse miles of uninterrupted waste of sand and rock before reaching a place of destination, its march became still more clearly defined. At Estacia the origin of the disease was distinctly referable to the arrival of a young man, and his sister, in a sickly state from Rabil, where the disease was raging; from the house in which these two persons were lodged, and from that occupied by a man who about the same time came from Porto Sal Rey, the fever spread over the whole of the village. In Cabeçadas, Tharafes, Fundodas Figueiras, and Joao Gallago, the disease could in each case be clearly traced to one or two individuals coming from an infected district, and affecting first the inmates of the house they remained at, next the visitors, and gradually extending thence over the whole of the inhabitants. In fact, in each town and village on the island the disease first appeared in a single house, which became an irradiating focus for its dispersion in all quarters.

The exemption of persons who removed in time from infected places was clearly shown in many instances. Dr. Almeida, by changing the residence of his family from place to place, succeeded in keeping the whole of them intact. The same gentleman for some time prevented the introduction of the disease into Fundodas Figueiras, by the establishment of a sanitary cordon; and afterwards retarded its progress by the imperfect means of segregation of the sick which he had in his power. Boaventura was for some weeks without a case of fever, although the disease was raging in Cabeçada, a few hundred yards only from it, by the adoption of measures to prevent intercourse.

From the above statements it is evident that the fever at Boá Vista possessed the properties which are usually attributed to a contagious disorder, and connecting this fact with the time and circumstances of the seizure of the soldiers at the fort by fever, and of the appearance of the disease in Porto Sal Rey, will leave little doubt of its introduction into the island by the Eclair.

"Of the 87 persons employed on board, in the launches, and at the coal heap, on the island, ten died; a rate of mortality not great, but considerably beyond the average rate of death of the native population of the island. Most of the labourers on board went below, and those at the coal heap had free intercourse with the healthy portion of the crew, who were living, it may be said, with their sick shipmates. Yet in one case only was a labourer connected with the Eclair, the first person attacked in any of the villages, and none of the washerwomen were among the first attacked in Porto Sal Rey. Facts such as these would indicate that the fever only propagated itself to those who approached others under its influence. The case of the labourer forms, however, a marked exception to this, as in his case the medium of infection seems to have been either something in the ship while the sick were on shore, or some of the healthy crew, or possibly the clothes which he is supposed to have obtained surreptitiously from the fort. He was, indeed, on board when the sick were brought from the island, but so were also nearly the whole of the labourers. In other respects the case of this person is invested with much interest, from the fact of his having been attacked as early as the 17th of September—his being carried to his own house in Rabil, where, after a long but not violent attack, he recovered, but lost the whole of his family from fever, and from his house being the nucleus from which the disease spread over Cabeçada.

"There was no fever on any of the other islands, except at St Jago, where there was the common endemic remittent, which prevails there every season, during and after the rains. There was no unusual amount of disease at Sierra Leone, the Gambia, or any other part of the coast visited by the Eclair. In short, there was no malignant fever anywhere on the African Coast, or among the islands, except in the Eclair and at Boá Vista.

"The whole of the Cape de Verde islands are within a few hours sail of each other with the north-eastern trade wind, which blows in this quarter, with very little variation, throughout the year. Now had the disease depended upon a general vitiation of the atmosphere over the whole group, it is not reasonable to suppose that all the islands would have escaped excepting Boá Vista."

Dr. McWilliam found it impossible to ascertain, with any degree of accuracy, the number of persons attacked in the several villages; but from the best information he could obtain, presumes that about two-thirds of the whole population of the island were affected by the fever. The fatal cases terminated generally with the same symptoms as those presented by the girl who died on the 1st June at Moradinha. Remittent and intermittent were much less common among the convalescent who were seen by Dr. McW. on his first arrival, than he had expected; they were generally very slight, and benefited much by quinine. This state of debility was, Dr. McW. believes, greatly owing to the famine under which the people had for some months been labouring; a circumstance which, doubtless, not only retarded convalescence in a great many cases, but, in all probability, considerably added to the rate of mortality.

Of second attacks, Dr. McW. could only find five cases at all clearly established; from the little appreciation that the people have of time, it is not possible to arrive at the exact intervals between the attacks.

With regard to the protective power of a first attack against a second, Dr. McW. states that the natives, not naturally brave, had no hesitation,

after having passed through the fever, to enter freely the houses of the sick, and a Spanish carpenter and a cigar maker, who had both had fever with black vomit, in the Havana, visited, with impunity, nearly every sick person in Porto Sal Rey, and also assisted in sewing the dead bodies up in sheets. A Portuguese gentleman attributed his immunity from fever, while he was attending his son on his death bed, to having had the disease at St. Domingo, in 1817.

In estimating the mortality from the fever at Boâ Vista, the fact of the sick having been, for a considerable time, without any medical assistance whatever, must be taken into consideration. Dr. Almeida, the resident physician, went from Porto Sal Rey to the country, on the 19th of November. Dr. Kenny died on the 27th of November. The surgeon of the Governor-General left the island on the 1st of December, and MM. Moraes and Leao, surgeons in the Portuguese Navy, did not arrive from Lisbon until the middle of February, 1846.

The treatment adopted by Dr. Almeida and the Portuguese surgeons, was very simple. They rarely bled from the arm, but sometimes cupped. Blisters were applied; diaphoretics and antispasmodics administered internally. But the remedies chiefly relied upon were quinia, mild purgatives, and enemata. Mercury was not exhibited in any form. Great dependence was placed upon quinia in checking vomiting, whether bilious or black.

How is the reappearance of the fever at Moradinha to be explained? During the prevalence of the disease, there was one case here as late as the 24th of March. Was not the interval between this and the subsequent occurrence of the disease on the 20th of May, sufficiently long to extinguish the virulence of the poison? or is it not more probable that the female who returned to that place a few days before she was attacked, had imbibed the poison, in one of the houses of the eastern villages, where there were many persons in a state of convalescence only early in May, although there was no one confined to bed with fever later than the end of April. If the latter suppositions be correct, this forms a second case in which the disease appears to have been communicated without direct intercourse with the sick.

The main conclusions, from a review of the whole of the circumstances that have been brought under my notice, remarks Dr. McWilliam, in relation to the disease at Boâ Vista, seem to be—

“First, That the fever on board the *Eclair* was primarily the remittent of the African coast, which is not a contagious disorder, but that the disease acquired contagious qualities in virtue of a series of causes.

“Second, That although there exists, on the island of Boâ Vista, a physical cause capable of producing remittent fever, yet it does not appear that that cause was in action when fever broke out in September, 1845, and that the island was quite healthy when the *Eclair* arrived there.

“Third, That the disease of which the Portuguese soldiers died at the fort, on the small island, was that which afterwards ravaged Boâ Vista, and the same as that which prevailed among the crew of the *Eclair*.

“Fourth, That the fever was propagated throughout the island almost exclusively by direct intercourse with the sick, there being only two cases in which there appears any probability of persons having been infected in any other way.

“Fifth, That although those who had passed through the fever were much less liable to the disease than those who had not, yet it would appear that a person having had one attack, possesses no absolute protection against a second attack.

“Sixth, That connecting the whole of the circumstances attending the arrival

and stay of the *Eclair* at Boâ Vista, with those under which the disease appeared on the small island, and afterwards on Boâ Vista itself, leave no doubt of its having been introduced by the *Eclair*.

"Seventh, That, in all probability, the mortality from fever on the island was much increased by the want of proper nourishment for the people, as well as by the total absence of medical assistance for some months.

"Eighth, That the disease had, in no case, spread to any of the other islands of the Cape de Verde Archipelago."

Upon a review of all the evidence adduced in the report before us, there cannot be a reasonable doubt as to the contagious character of the disease which prevailed at Boâ Vista, nor do we think that it will be questioned that the infection was introduced into the island by the sick landed from on board of the *Eclair*. What was the exact character of the fever thus introduced and propagated, until it spread over the entire population of the island, we are presented with no data upon which to form anything approaching to a decided opinion. Its phenomena, invasion, progress, and duration, are not detailed in such a manner as to convey a clear idea of its nature, or to enable us to compare it with the other fevers prevalent in warm climates. It is true that we are told that the disease, when it first appeared on board the *Eclair*, was, in the opinion of Dr. McWilliam and the medical officers of the ship, the ordinary remittent fever of the African coast; that there was "no proof that the fever in question was in any degree contagious before the vessel reached Boâ Vista;" and "that the contagious properties which marked the *Eclair* fever at Boâ Vista, were acquired or contingent, and not primarily or essentially belonging to it." As Dr. McWilliam frequently designates the fever at Boâ Vista as the yellow fever, he must be understood as maintaining the position that the remittent fever may, by a combination of morbid causes, become converted into the yellow fever—this he, in fact, states, in so many words, namely, "that from the endemic remittent of the African coast, the disease had, from a series of causes, been exalted to a concentrated remittent, or yellow fever."

To say nothing of the improbability of a disease, which it is acknowledged not to be contagious, even in its most virulent form, and in the places where it prevails as an endemic, assuming, under any circumstances, so decidedly a contagious character as was evinced by the fever at Boâ Vista, we must protest against the position assumed in the report before us, that, under any circumstances whatever, the bilious remittent is capable of becoming converted into the yellow fever, as a pathological absurdity. The latter is a specific disease, with strongly marked characteristics that separate it, as it were, from all other fevers, while it is produced by a peculiar poison or morbid cause very different from that which gives rise to the bilious remittents of warm climates.

The supposition of Sir William Pym is much more plausible, namely, that the disease on board the *Eclair*, from the 3d of April to the 8th of June, was, in the words of the surgeon of the ship, "a well marked remittent;" but that, upon the 23d of July, the yellow fever broke out among the crew, one man dying, on the 27th of July, with black vomit. From the 23d of this month the disease spread rapidly, a passenger and thirteen seamen having died before the vessel arrived at Boâ Vista, many of them with black vomit, which appeared in most of the fatal cases afterwards, until the *Eclair* arrived in England.

But was the disease at Boâ Vista the same as that known in this country as yellow fever? Judging from the few scattered and imperfect notices

we have been able to gather from the report before us, of the character of the fever as it prevailed upon the island, taking, particularly, the histories, unsatisfactorily detailed, it is true, of the man and girl who were seen by Dr. McWilliam at Moradinha, on the 1st of June, (and we are informed that the fatal cases terminated generally with the same symptoms as those presented by the girl who died on the 2d of June, after ten days' illness); we should certainly conclude that the disease was by no means the same as the yellow fever of this country. It may have been the Bulam fever—Sir Wm. Pym states, indeed, that this was the fact—a disease which, by many of the writers conversant with the fevers of warm climates, is considered to be a distinct disease from the yellow fever, and eminently contagious.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Practical Observations on some of the Diseases of the Stomach and Alimentary Canal.* By JAMES ALDERSON, M. D., F. R. S., Fellow of the Royal College of Physicians; late Senior Physician to the Hull General Infirmary, &c. London, 1847: 8vo. pp. 215.

DR. Alderson claims no higher character for the present work than that of the record of a series of observations, "classified and reasoned upon," so as to exhibit the sum of his own experience in reference to some of the more important of the organic and functional diseases of the digestive organs. Nineteen cases are detailed illustrative of the symptoms and pathological anatomy of carcinoma of the stomach and œsophagus, malignant ulceration of the colon, hypertrophy of the coats of the stomach—and perforation, by ulceration, of the stomach and ileum. The cases are accompanied by brief summaries and comments, in which the author has confined himself to the results of his own observations, without attempting to review the valuable contributions to the pathology of the chronic affections of the alimentary canal, lately made, by the English, French, and German physicians. In deducing inferences from his observations he has "abstained as much as possible from speculating, or propounding any new pathological opinions." So that the work is to be received simply as an exposition of his personal experience, and not as making any pretensions to the character of a complete treatise on the subjects embraced in it.

It would lead us to a very extended notice of the work of Dr. Alderson if we were to attempt to present to our readers an analysis of his observations upon carcinoma of the stomach and œsophagus—these are based upon the cases detailed, and it would not be doing him or the reader justice if they were presented without the latter. Of his general summaries some opinion may be formed from the following, which constitutes the chapter on Malignant Ulceration of the Colon.

"Malignant ulceration of the bowel would hardly be classed as a carcinomatous disease, except for the accompanying secondary deposit of encephaloid matter in the liver, as there occurs no such deposit at the seat of ulceration. The general symptoms of malignant ulceration are the same as those which accompany deposit of cancerous matter in other parts of the system. There are, the same loss of flesh, change of colour and complexion, the same cast of countenance and anxious look. The pulse and tongue are alike natural up to a late period. Where ulceration occurs in the colon, the commencement of the disease is marked by dysenteric symptoms, which appear many months before the disease approaches a crisis. The symptoms become chronic, the ulceration which gives rise to them proceeds through the coats, and as an instinctive act in the system, to prevent a rupture into the cavity of the abdomen, lymph is poured out, and neighbouring organs are agglutinated together. The lymph which is thrown out is of a smoky hue, of a melanotic tinge, and is easily torn through. The bladder in the male, and the vagina in the female, are the parts often thus involved. A shivering fit, accompanied by delirium, marks the time when perforation finds its way through the coats.

"This process of throwing out lymph, which is called instinctive, or by others preservative, is in fact more properly but a prolonged process of destruction. It occurs only in chronic disease, and where the constitution is in a failing state, and never in early life, and in acute disease, when such a restorative effort on the part of nature would be naturally looked for.

"I have notes of a case of the above disease, where malignant ulceration occurred in the sigmoid flexure of the colon, in which lymph was poured out, and a union with the bladder took place, permitting the contents of the bowels to pass

through the bladder, and the urine in turn to irritate the rectum: in this case the liver was extensively studded with encephaloid deposit. The patient had through life suffered from indigestion and from gall stones, and spasm of the gall-ducts: a large gall-stone was found in the gall-bladder.

"Ulceration may, however, take place in the cæcum, which is not of a malignant character; it is consequent upon obstipation."

The following is the author's summary of the pathology of hypertrophy of the coats of the stomach, introductory to the histories of three cases of that affection.

"It occurs less frequently than carcinoma, from which it appears to differ materially, though it has sometimes been classed under diseases of that nature, and still by many is considered as only an earlier stage of carcinoma.

"The subjects of this disease are generally between the ages of 40 and 50, and are persons who have indulged in the use of stimulants. The disease consists in a state of hypertrophy of the coats of the stomach. I have met with it only in the pyloric extremity.

"It seems to have been commenced by some effort to overcome an obstruction at the pylorus, which has tended to narrow the opening; by a sort of instinctive process the coats become thickened, and their structure added to, so acquiring additional power to perform the effort required. The disease may also be attributed to irritation, or chronic inflammation, which has not been subdued, but which, on the contrary, has been continued and aggravated by repeated indulgence in stimulants. The capillary circulation of the mucous coat is thus for a long time increased; the muscular coat partakes of the irritation, and hypertrophy is the consequence. On a section being made of the coats of the stomach, the interlacing of the fibres of the muscular coat is very apparent and peculiar. The other viscera are not affected constitutionally, and hence we are not compelled to place this in the class of constitutional or hereditary diseases. This disease is preceded by morning sickness, and want of appetite; in the latter stages the general symptoms are constant retching and sickness; great impatience for drink, which, of whatever quality, and in whatever quantity, is almost immediately rejected. Dark-coloured fluid is also vomited in large quantity. Everything taken into the stomach gives pain, and causes not only its own rejection, but also copious vomiting of vitiated secretion from the mucous lining of the stomach. There are heats and chills, and the pulse is quick, and the tongue furred. Pain is usually felt on pressure at the pit of the stomach, but not invariably; more so, probably, in cases which owe their origin to unsubdued chronic inflammation than to mere obstruction of the pylorus. Emaciation is not a symptom of the disease, and hence its absence negatively distinguishes the complaint from carcinoma."

In chapter xiii. Dr. Alderson presents a summary of his observations on the treatment of structural disease of the alimentary canal. Unfortunately, our entire ignorance of the nature and cause of most of the malignant affections of this, as well as of the other parts of the system, has prevented the slightest advance being made towards a discovery of any remedial means calculated to prevent their occurrence, or, when present, to arrest their course or effect their removal; it is evident, therefore, that, in the present state of our knowledge, a palliative treatment is the only one within our power. It is true we have, from time to time, been favoured with the enunciation of remedies and plans of treatment, to which a character little less than specific has been assigned—but we believe that the curative effects of these have only been vaunted in cases of malignant degenerations of external parts, and not in those of the internal organs. For these there has as yet been no remedy proposed.

"The first symptoms apparent in structural disease," remarks Dr. A., "simulate those of mere disordered functions, but they are in reality the consequence of the deposit, which commences a process of irritation, tending towards disorganization in the mucous membrane; in other words, they are the consequence of a certain degree of actual change of structure; it is plain, therefore, that treatment must be directed not merely to restore the healthy state of the secretions, but to counteract the constitutional state of tendency to morbid deposit; and the object to be sought for can unhappily only be—not that of perfect restoration, but—the means to retard the progress or control the advance of the development, and to prevent in

some degree threatened encroachments upon important organs. This is the utmost that hope dares to point to, and unhappily more than can often be attained.

"As soon as the symptoms fairly indicate that the disease is in the larger curvature, or in the pylorus, as we have endeavoured to show they may do before ulceration commences, and long before positive evidence is given in the form of tumour, a course of active counter-irritants should be immediately adopted. Local depletion, either at the pit of the stomach, or over the spine, may succeed in checking or retarding the irritation of the mucous coat, and blisters may be applied as near to the seat of pain as possible. It is necessary, at the same time, to discontinue all aperient medicines which tend to irritate the mucous membrane of the stomach, and to choose such as act upon the colon, since we must seek to obtain enlarged secretion from the mucous membrane of the bowels, both as a counter-irritant, and as a measure of depletion. The occasional and moderate use of calomel, unmixed with any irritating purgative, or of hydrargyrum cum creta, is a most useful adjunct. There is evidence in several ways that counter-irritation has apparent power in this disease. The appearance of gout and erysipelas seems to stay the progress for a time. In case No. 8, there is an instance of an external ulcerated tumour in the groin, which seemed to divert the course of the disease.

"Simple astringents, as lime water given in milk, and sedatives, may be usefully employed in this stage of structural disease, in the same way as if the secretions, intended to be corrected, were the result of mere disordered function. All stronger astringents should be carefully avoided. The opiates should be sparingly had recourse to, as there will be too much occasion for their aid in succeeding periods of severer trial; they may be usefully combined with alkalies, if indicated, and with hydrocyanic acid. The diet should at once be changed to avoid all irritating, stimulating food. The simple animal food which is so useful in common dyspepsia, will be too irritating for this stage; beef and chicken tea would not be objectionable, but there is generally a distaste for them. Milk is the only animal food which is generally agreeable, and it is highly appropriate. Pure air, quiet, rest from great exertion, whether mental or bodily, but especially the latter, should be sought.

"When the disease is so fully established that the mucous membrane has given way, and has become ulcerated, the treatment must be confined to sedatives and soothing remedies, and to the sedulous avoidance of anything, whether in diet or medicine, the application of which would be likely to irritate an open sore. I am, however, still decidedly of opinion that counter-irritants procure relief to the suffering, but they must be used with the utmost care, to avoid increasing the debilitated state of the patient, as the fearful loss of strength is a serious addition to the distress of pain. The counter-irritants must also not be applied to the immediate seat of the deposit; for as the disease extends more nearly to the parietes, and adhesions take place, irritation in the immediate neighbourhood may rather do harm than good, and at any rate increase the internal pain; whereas the object of the counter-irritant is not only to retard encroachment on other organs, but to divert vascular action to another part. Any part of the chest is, therefore, to be preferred; and in regard to size and continuance, the counter-irritants must be carefully regulated, so as not to assist in reducing the strength. I have found blisters the best form. Antimony should be carefully avoided.

"It is highly desirable, if possible, to keep up the natural muscular movements of the canal, in order to keep off anything like inverted action, producing vomiting, but the utmost care and discretion are necessary in the use of aperients. As they have all to be in contact with an open ulcer, nothing that could be painful to a surface in such a state should be used. Mercurials give probably the least irritation when judiciously given, and in small quantities. Borax, with a view to soothe the pain from soreness of the surface, and very weak nitric acid, as tending to cleanse the impurity, may both be used as palliatives. I have seen great benefit, even at this time, from the sedative effects of hydrocyanic acid, but it is impossible to dispense with the use of morphia. With so much pain to be overcome, and so much restlessness, it is impossible to withhold such a source of comfort; and the general effect on the system is not so injurious as when there is a less fearful state of disease.

"When carcinomatous disease attacks the œsophagus and cardia, the counter-irritant plan must be avoided near to the seat of the disease, and this is more particularly to be regarded the higher the disease is situated in the œsophagus. The proximity of the trachea, and its proneness to inflammation, render the use of blisters on the throat an error always to be avoided. The power of receiving food into the stomach varies in different cases, and, of course, anything not of an irritating nature that can possibly be taken, must be permitted. It sometimes happens that a small portion of a solid substance may be forced down when fluids cannot find their way.

"The treatment of carcinomatous disease, when the deposit takes place in the neighbourhood of the stomach, but external to it, must take a wide range, having regard to the different organs whose functions become interfered with. I have already remarked on the too indiscriminate use of purgative medicines in this case, and on the general treatment, in the chapter on the disease in this form. I will only pause here to repeat that, while palliative measures are applied to each of the symptoms as they arise, those which are intended to meet the inactive state of the lower bowel, should be administered with the utmost caution and judgment. I have previously given the reasons for this caution, and I conceive that the physician's attendance can be in no way more useful than in protecting the patient from the additional suffering from the inconsiderate use of purgatives."

The second part of Dr. Alderson's treatise treats of "Some of the Functional Diseases of the Stomach and Alimentary Canal;" comprising some cursory observations on functional derangement of the digestive organs, dyspepsia, heart disturbance, functional derangements of the colon, and a view of the comparative symptoms in structural and functional diseases of the stomach.

Without pausing to criticise the accuracy of the terms functional and structural as applied to disease, especially in the sense in which they are employed by our author—believing that the meaning intended to be conveyed by them is sufficiently well understood, we shall present our readers with the comparative view presented by Dr. Alderson of the symptoms in structural (malignant) and functional diseases of the digestive organs. The description will hold good in general, and is useful in directing the investigation of the physician, but it is not so invariably accurate as to be depended upon alone as a means of diagnosis.

"*Complexion and general appearance.*—It is very difficult to describe precisely the peculiar hue of the complexion which belongs exclusively to cancerous disease, at least so as to make it at once recognizable by those who are unaccustomed to notice it. It is, notwithstanding, perhaps, one of the most distinguishing marks of the disease. It is, of course, modified by the natural complexion of each individual; but it consists in a certain dingy, sallow, exsanguious, yet opaque appearance; it is unlike the yellow tint of jaundice, or the opacity seen in states of heart disease. The eye is sunken, the adnata pearly; there is a peculiar cast of countenance, expressive more of care and depression than of dissatisfaction, and more of deep thought than of peevishness.

"In functional disease the hue endeavoured to be described is never seen; it is only in pyrosis that there is any approach to it, when there is often much change in the natural colour; the countenance in pyrosis has a pinched and dissatisfied expression, rather than one of thought and anxiety.

"*Emaciation and loss of strength.*—In structural disease the emaciation varies according to the situation of the diseased deposit. In the strictured form of disease, both of the cardia and œsophagus, it takes place to an extent not seen in any other kind of disease; when the diseased deposit is in any other situation, whether within or external to the stomach, there is still immense wasting of the flesh, though not in the same extreme degree. Loss of strength in stricture of the cardia and œsophagus is not experienced in equal proportion to the emaciation, for in this particular situation it is not unusual for patients to refer to their vigorous sensations as an argument that their cure ought to be within the reach of art. On the contrary, when the disease is within or external to the stomach, there is an extraordinary prostration of strength, exceeding the severity of the other symptoms, and due, of course, to the number of viscera which are interfered with.

"In functional disease slight loss of flesh may accrue, but the strength rallies immediately on intermission of the more distressing symptoms.

"*Pain.*—In the early period of structural disease pain is not, in all cases, present; the absence of pain, accompanied with other well known symptoms, leads to the presumption that a disorganizing process is being carried forward insidiously: when pain is present it is at the pit of the stomach, of a lancinating, grinding kind, and usually confined to a particular spot. In the strictured form pain is more acute and more defined than in the areolar or colloid.

"The functional disease is peculiarly marked by pain, which is more diffused, and intermits, coming on at intervals, according to the stage of digestion. The suffering is never of the acute lancinating character, and yields in a temporary way to the use of alkalies.

"*Vomiting.*—*Vomiting* is an important symptom in structural disease; it is to be found in some stage of the complaint, though not invariably present at all times. In the latter stages, and as the disease extends itself, the imperfect action of the muscular coat converts the vomiting into a mere act of regurgitation.

"In the functional disorder, vomiting is only present occasionally, except in pyrosis, and is plainly set up by the presence of food on which digestion has been imperfectly performed, or of vitiated secretions, and does not return as a constant symptom; there are sometimes regurgitations of undigested food shortly after eating, but they do not form any prominent symptom, and soon subside or yield to alkalies.

"*The fluid vomited.*—The dark-coloured fluid, approaching nearly to the character of venous blood, is a peculiar mark to distinguish structural disease from mere functional derangement of the digestive organs. In the latter complaint it is never present.

"*Constipation.*—In structural disease, constipation remains always present as a constant symptom. In the latter stages, and especially when the disease spreads to the colon, violent bowel attacks occasionally supervene, accompanied or not with hemorrhage. The seat of the collection is the cæcum.

"In functional disease, costiveness is a frequent symptom; but the relief obtained by aperients and purgatives is not of such mere transient benefit as in the structural. The most distressing dyspeptic symptoms arise from collections in the arch of the colon.

"*The tongue.*—In the structural disease, almost without exception, the tongue is clean, and continues so until an advanced period; the aphthous state of the tongue is usually the attendant on the later stages; it is merely to be referred to failure of power, as in other chronic diseases.

"In the functional disease the tongue is generally foul, and covered with fur; the aphthæ are, of course, not present, although there is often a slight ulcerated place here and there on the tongue, quite different from aphthæ, and to be referred to the acid state of the stomach.

"*Flatulence* is a symptom attending both the structural and the functional diseases of the stomach. In the structural it is always fetid and almost constantly rising. In the functional it gives great distress by distension, and relief is felt by its escape; it is not of the same offensive character.

"*Of the appetite.*—Though digestion is imperfectly performed in both diseases, in structural disease, as a general rule, the patient finds that he is only able to take farinaceous and vegetable food. In the functional, the patient generally finds himself better with an animal diet.

"*Examination by touch.*—Examination over the abdomen may be made freely by touch in the structural disease, without causing pain to the patient, except when pressure is made over the precise seat of the carcinomatous deposit. The pain which results from such pressure is severe and lasting, but it is confined to that particular spot. When the disease is situated within the stomach, it is described as resembling the pain which precedes vomiting. The liver is not sensible to pain on pressure, unless the tubera be raised above the convex surface, and are vascular. When the tubera are thus elevated, they can be detected through the parietes when the patient is thin. In the functional disease, there are times when pressure anywhere over the stomach and upper part of the abdomen produces pain. The patient feels a dread of being touched, as the pain felt on

pressure arises from the inflated state of the stomach and bowels, percussion carefully made will give evidence of the nature of the case.

"Progress and development of the disease.—The structural disease comes on so gradually and insidiously, that the patient is often unable to give a history of the very commencement of his illness; and cases have occurred in which a considerable state of disorganization has taken place before the attention of the patient has been directed to his condition by any train of tangible symptoms.

"In functional disease, symptoms of the derangement of the digestive organs force themselves very early on the feelings and attention of the patient, and the magnitude of the suffering seems to exceed the actual amount of disease, and the patient presses his symptoms earnestly, and dwells minutely on the circumstances of his case."

The diseases of the colon, and the influence exercised upon the general health by the disordered states of this organ, have not received that attention which their importance, as well in reference to prognosis, as to a proper direction of our curative measures, in certain painful and otherwise distressing affections vaguely referred to derangement of the digestive organs, demands. The chapter upon the functional derangements of the colon, in the work before us, contains a few judicious hints in reference to the subject, but it is far too vague and incomplete to be received as an exposition of the functional diseases of that organ, or of their direct or reflex action upon the functions of other organs, whether neighbouring or remote. A few extracts from it may serve as useful hints to those who have the inclination and opportunity for a more extended investigation of the subject.

"To review all the diseases of the colon," remarks Dr. Alderson, "would be to recapitulate nearly the whole train of dyspeptic symptoms. While referring to the means for immediate relief in nearly all the forms of dyspepsia, I have remarked that the use of aperients, by acting freely on the colon, can alone reach the final cause: it is of course highly desirable to select such medicines as act peculiarly on that organ. When the colon is obviously the point of derangement and the seat of pain, and the more prominent symptoms are not those of mere dyspeptic character, accumulation to a very considerable amount, accompanied with a large evolution of gas, generally exists; this constitutes the complaint, especially colic, which is a frequent cause of very severe suffering. Collections in the cæcum are not felt to be so distressing, as regards dyspeptic symptoms, as when they take place in the arch: the cæcum is so bound down by membrane, and so preserved in its natural position, and it is also so supported from the effects of gravity by lying on the side of the pelvis, that it is only from distension that pain is felt in this part.

"The cæcum being out of the current appears to be the natural depôt where collections to some extent are intended always to exist. There may be especial reasons for this delay, for, though we are unacquainted with the peculiar function of the appendix, it is more than probable that some change takes place at this point, for which delay is necessary. The cæcum is also situated more out of the reach of other organs, and less likely, by its state of distension, to interfere with them. The mere collection, therefore, of matters in the cæcum is not necessarily a cause of colic, unless, by a too long continuance of the contents, decomposition or fermentation take place, and gas be evolved, which is pent up by some accumulation further on in the canal.

"The kidneys and the bladder, from juxtaposition, are often much irritated during attacks of colic; but as these affections are but secondary, they subside on relief being obtained from the colic. A long list might be presented of distressing symptoms, the cause of which is traceable to a disordered state of the colon, and all of which are, in their turn, sometimes supposed to be either primary diseases, or symptoms of serious disorders. Epilepsy, loss of power, approaching to paraplegia, pains simulating rheumatism, cramps and spasms in the limbs, and many others. All these may occur in consequence of nervous irritation set up in the colon, and communicated to the brain and spinal marrow. A single attack of epilepsy is sometimes induced by this irritation in younger persons, who are not afterwards subjected to it; and in others who are habitually epileptic, irritation of the canal, more particularly of the colon, multiplies the number and increases the severity of the attacks.

"It is obviously not intended by nature that collections should take place in the arch of the colon in the same way that they do in the cæcum; it is not supported in its position as the cæcum is, and therefore its weight, when fully loaded, conveys an uneasy sensation; this is described by patients as of a dragging kind, and as if there were a separation between the stomach and bowels; thus, while the cæcum, which is intended to act as a *depôt*, retains its contents without uneasy sensations, the arch immediately gives notice, by pain, of the presence of accumulation, for which it was apparently not constructed. There is also experienced a pain beneath the left shoulder-blade, which is relieved by pressure, which I should refer to the external respiratory nerve through the medium of the stomach. As the colon extends itself across the body in the vicinity of the stomach, collections in the arch interfere mechanically with it, and we find all those true dyspeptic symptoms which we have noticed as coming on when the stomach is empty, and in a disordered state. It is chiefly when the arch of the colon becomes obstructed, and the functions deranged, and continuance of the disordered function has given rise to pyrosis and many other forms of dyspepsia, that those difficult cases arise which, without due caution, may be mistaken for structural disease: the large and continued amount of pain, the variety of distressing sensations, similar to many which accompany organic disease, and the fulness in the abdomen, which is distinguishable even to the patient, often lead to a false impression, if not in the physician, at least in the mind of the patient. In these cases it is sometimes difficult to make it understood that so much suffering and disturbance can proceed solely from a cause which appears to be so inadequate to the result; and it is also, in consequence, difficult to persuade the patient to follow up a line of treatment which requires some degree of resolution and perseverance."

After giving the details of a case in exemplification of the mischief from the want of a proper use of aperients, Dr. Alderson remarks:—

"I must guard myself from the possible imputation of being the advocate of a continual indiscriminate use of purgative medicines. Not only is such a habit injurious to the healthy tone of the digestive organs, but in reference to the colon it may be persevered in, while the actual cause of irritation, which is intended to be removed, may remain unapproached. The peculiar construction of the colon admits of a passage along the course of a channel, the sides of which consist of so many loaded cells; thus, though there is action of the bowels, the disturbing cause may still remain, and can only be fully dislodged by a change of aperient and other remedies. It is the property of certain medicines to act especially on certain parts of the intestinal canal, and a too frequent use of these may allow accumulation in parts which they do not directly affect. It is a most useful hint to those who are compelled to the use of frequent aperient remedies, that the same medicine which has been found satisfactory, and has only lost its effect by frequent repetition, will regain its efficacy if the period of the day be changed, thus presenting it to the stomach and bowels when the organs are in a different state of rest or repletion; and this change is perhaps better than increasing the dose or altering the medicine to anything more active. I would also not be supposed to affirm that the most efficacious course of medicine could alone restore the tone of the digestive organs after they have become thoroughly deranged. A variety of sanitary rules should accompany the treatment, according to the peculiarities of the case; and it frequently happens that a change of air and scene is indispensable to the recovery after every other wise and prudent measure has been adopted."

The work closes with some general remarks on the practical results to be derived from the accurate diagnosis of structural and functional diseases, and the capability of deciding at what particular period the treatment should cease to be directed towards a cure—at what time energetic treatment should be desisted from, and protective and palliative, having in view only to procure comfort and avoid reducing the strength, resorted to.

The forms of disease referred to in the several chapters of the essay, are illustrated by some prettily drawn and coloured lithographs.

D. F. C.

- ART. XIV.—1. *Annual Report of the Medical Superintendent of the Temporary Provincial Lunatic Asylum, at Toronto, (Canada West,) from April 1st, 1846, to March 31st, 1847.* Toronto, 1847.
2. *Thirtieth Annual Report of the State of the Asylum for the Relief of Persons deprived of the Use of their Reason.* Philadelphia, 1847.
3. *Report of the Superintendent of the New Hampshire Asylum for the Insane, for 1846, 1847.* Concord, 1847.
4. *Twenty-sixth Annual Report for the Bloomingdale Asylum for the Insane.* New York, 1847.

1. OUR brethren in Canada are beginning extensively to participate in the interest for the Insane, which prevails in their father-land, as well as in the United States. A commodious asylum is in progress at Toronto, and, meanwhile, the patients suffering under mental disorder are accommodated in temporary buildings. Dr. Walter Telfer is the Medical Superintendent.

From the report before us, which we believe to be the first that has been published, the following statistics are extracted:

	Males.	Females.	Total.
Remaining in the Asylum, 1846	55	36	91
Admitted during the year	76	47	123
Whole number during the year	131	83	214
Discharged or died	60	22	82
Remaining March 31st, 1847	71	61	132
Of the patients discharged, there recovered	37	14	51
“ “ died	10	1	11

Causes of Death.—Phthisis pulmonalis, 4; exhaustion, 2; epilepsy, 2; scarlatina, 1; delirium tremens, 1; “a decline for several years,” 1.

Four cases of delirium tremens were included among the admissions.

An idea of the department for the better class of patients at this institution, may be obtained from the following extract:

“In consequence of the great increase of the number of patients, the government allowed the east wing of the parliament house to be used as a branch establishment, in addition to the former house. This additional building was well furnished; and about fifty of the best conducted patients were removed to it in July last. This house has the important advantage of exhibiting no appearance of a place of confinement, looking more like a boarding-house, or private residence. All the bed-rooms are furnished with wash-stands, basins, looking-glasses, brushes, combs, indeed, everything that is usually found in a respectable boarding-house, and the breakage is not greater in proportion. The table is furnished with good, plain, nutritious food, and a knife and fork given to each patient. The males and females, who occupy different parts of this building, have also separate apartments assigned to them for their meals,—the whole of each class sitting at the same table. The greatest quiet and order prevail throughout the establishment.”

Intermittent fever is not unfrequently the cause of mental alienation. The following remarks, in reference to three cases of this kind, may be of practical utility.

“I would here refer to the case of three patients, who, previously to their becoming insane, had been labouring under intermittent fever; after becoming insane, and during the early part of their residence in the Asylum, no symptom of that disease appeared. But, suspecting from their previous history, that this disease might still be connected with their insanity, as the latent cause, they were put under the proper treatment for intermittent fever. The insanity began to decline, and, with its gradual disappearance, the original disease again manifested itself in the usual symptoms. Ultimately, complete restoration to health of both body and mind was effected.”

2. At the Frankford Asylum, on the 1st of March, 1846,

	Males.	Females.	Total.
The number of patients was	25	25	50
Admitted in the course of the year	18	27	45
Whole number during the year	43	52	95
Discharged or died			37
Remaining Feb. 28th, 1847			58
Of the patients discharged there were restored			19
“ “ “ died			6

Causes of Death.—Disease of brain (paralysis), 1; marasmus and inflammation of the bowels, 1; marasmus, 1; abscess of the liver, and inflammation of the bowels, 1; suicide, 1; brouchitis, 1.

The following remarks in reference to incurables are extracted from the report:

“Under the influence of a system of salutary discipline and uniform kindness—embracing close attention to their moral and physical wants—we have the satisfaction of seeing many of these improve in bodily health, and in the use of their mental powers, and become comparatively happy and contented members of the family.

“The most difficult part of our duty towards this class, is to provide them with occupation of a kind suited to their enfeebled capacities. Many, when in health, having never been accustomed to active labour, are not willing, (and some are unable,) now to engage in it. In summer, however, they extend their walks to considerable distances, engage in some light employment on the farm, or amuse themselves in the open air. It is in winter, when they are almost entirely debarred from these pursuits, that the difficulty is most felt, and these patients are more apt to become discontented, and their disease to undergo a change for the worse. To obviate this difficulty in part, a school was established two years ago on the female side of the house, which has been attended with most gratifying results, and within the last three months, one has been opened among the men, which is attended two or three hours daily, by from ten to twelve of the patients, and, for the short time that it has been in operation, the improvement in the habits and conduct of some who attend it, has been highly encouraging. Some show a fondness for the books, maps, pictures, &c., who before seemed to take no interest in anything, one man writes correctly whatever is dictated to him, though apparently in a condition of complete imbecility, not having answered a question, or scarcely spoken a word for some years; another reads aloud, and seems pleased with his performance, who could never previously be induced to look into a book. For the demented and imbecile there seems to be nothing calculated to excite attention, and to call into exercise the remaining faculties, to greater advantage, than the school.”

3. From the report of the New Hampshire Asylum, the second which has been issued since Dr. McFarland became its superintendent, we learn the following particulars of the medical history for the last official year.

	Males.	Females.	Total.
Number of patients May 31st, 1846	56	42	98
Admitted in the course of the year	43	46	89
Whole number	99	88	187
Discharged or died	45	42	87
Remaining, June 1st, 1847	52	48	100
Of the patients discharged there recovered	20	28	38
“ “ “ died	3	6	9

Causes of Death.—Marasmus, 3; consumption, 1; paralysis, 1; effects of copious bleeding before admission, 1; disease of heart, 1; apoplexy, 1; not stated, 1.

From some judicious and well written remarks upon the causes of insanity, we make the following extract.

“From the past year’s experience, and especially from the records of preceding years, it appears that an undue concentration of the powers of the mind upon

one subject, to the exclusion of that diversity of thought so essential to the health of the mental faculties, has been prominent among the special causes of insanity.

"If the brain be in reality a congeries of distinct organs, having for their object the elaboration of thought, no more surprise could be manifested that the constant effort to solve the mysteries of one subject, and thus keep in long continued and severe action, one class of mental faculties, should produce insanity, than that the muscles become fatigued by over exercise.

"No cause has contributed to send to this institution, especially in former years, more cases than the effort of minds of limited capacity to comprehend subjects which more vigorous and better disciplined minds pass as incomprehensible. To a brain of good development, the study of abstruse subjects is doubtless an exercise not only harmless in its effects, but even calculated to give the mind additional vigour, while to a mind little indebted for natural strength, and uncultivated by the necessary disciplines, such exercises, uninterruptedly pursued, frequently produce insanity.

"The philosopher in *Rasselas*, who, from long continued study of Astronomy, fancied that the sun and stars revolved only at his command, and the clouds discharged their rain at his bidding, is a correct portraiture of this form of mental derangement. While nothing in these facts should have the effect to lessen the zeal of any in the pursuit of even the higher grades of study, they should tend to produce such a diversity in the range of thought, that no undue burden should be laid upon any of those individual faculties of the mind, which, being the only monitors of their own condition, give no warning of any of the dreadful evils which follow their over exercise.

"More especially should these considerations have weight in the study of the all-important truths of Holy Writ. As this class of studies is most engrossing, from its importance, and opens so wide a field for speculative inquiry, so the delusions which arise from ill-directed research, engraft themselves most forcibly upon the imagination. To a young person of nervous temperament, the mischief which arises from an ill-balanced exercise of the higher aspirations of our nature, is too frequently accomplished, before its approach is perceived."

4. At the Bloomingdale Asylum for the Insane,

	Males.	Females.	Total.
The number of patients Jan. 1st, 1846, was	60	57	117
Admitted during the year	75	58	133
Whole number during the year	135	115	250
Discharged or died	60	59	119
Remaining, December 31st 1846	75	56	131
Of the patients discharged there recovered	29	25	54
" " " died	10	3	13

Among the admissions, there were thirteen cases of delirium tremens, and habitual intemperance; and among the cures there were ten of the same class.

Three patients, nearly well when they left the Asylum, recovered soon afterwards.

Causes of Death.—Puerperal mania, with exhaustion from high excitement, 1; consumption, 1; chronic insanity, terminating in diarrhœa, 1; marasmus, 3; epilepsy, 1; paralysis, 1; general paralysis, peculiar to the insane, 5.

The following extract from the Report may possibly be beneficial, by tending to impart more accurate views in regard to the curability of Insanity.

"It is a pertinent and truly instructive fact, that at the Retreat, near York, England, an institution where provision is made for retaining every patient sufficiently long to make an entirely satisfactory trial of his curability, more than *thirty-five of every hundred that were cured, did not recover until after they had been in the Asylum more than a year.* This is a striking comment upon the practice, so prevalent in this country, of removing patients from the institution in which they are placed, if a cure have not been effected in the course of a few weeks, or months—a practice which, in numerous instances, has been fatal to the welfare of the patient, entailing upon him perpetual insanity, and upon his friends a permanent affliction."

ART. XV.—*Illustrations of Medical Botany; consisting of Coloured Figures of the Plants affording the important articles of the Materia Medica, and descriptive Letter-Press.* By JOSEPH CARSON, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy; Member of the American Philosophical Society, of the Academy of Natural Sciences of Philadelphia, Fellow of the College of Physicians, &c. &c. The Drawings on Stone, by J. R. Colen, No. 2. Philad., Robert P. Smith, 1847: 4to.

As we have heretofore noticed the first part of this work in favourable terms, it may be sufficient to state that the present portion of it justifies what was then said as to the beauty of the illustrations, and value of the accompanying text. This part, like the former, contains twenty plates. *Quassia amara*; *Q. excelsa*; *Acacia Arabica*; *A. catechu*; *Hæmatoxylon Campechianum*; *Cassia fistula*; *C. lanceolata*; *C. obovata*; *C. elongata*; *Copaifera officinalis*; *Myrospermum peruvianum*; *Glycyrrhiza glabra*; *Astragalus verus*; *Gillenia trifoliata*; *Cerasus serotina*; *Eugenia pimenta*; *Eugenia caryophyllata*; *Punica granatum*; *Citrullus colocynthis*; and *Momordica elaterium*.

We do not agree with the author in considering the first two of these plants as belonging to the Genus *Quassia*, for although the sensible properties are the same in both, their botanical characters and general appearance are distinct and marked. In *Quassia* the style is undivided, and the fruit consists of fine black drupes, whilst in *Picræna*, in which the second species is placed by modern writers, the style is trifid, and the drupes are from one to three, but usually the latter number. The remarks on the *Sennas* are deserving of attention, for although they do not fully elucidate this perplexing question, they throw much light upon it. Dr. Carson does not state why he has figured the *Elaterium* as a *Momordica*, and not as the type of *Ecbalium*, and at the same time has included the *Colocynth* in *Citrullus*, and not in *Cucumis*, when it has been shown that *Ecbalium* is far more distinct in its botanical and physical characters from *Momordica*, than *Citrullus* is from *Cucumis*.

In conclusion, we gladly reiterate what we formerly said of the merits of this work, and strongly recommend it to the attention of the profession.

R. E. G.

ART. XVI.—*Fifth Annual Report to the Legislature relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts. For the year ending April 30th, 1846.* By JOHN G. PALFREY, Secretary of the Commonwealth.

IN this report the number of births, marriages and deaths returned from most of the townships in the Bay State, are exhibited with the population as shown by the Census of the General Government in 1840. These returns are more full than those made in former years, showing that the obstacles to the fulfilment of the law are gradually yielding. There is one matter connected with this subject which gives us much surprise, namely, the absence of returns from the city of Boston, comprising not far from one-seventh part of the whole population of the State. When, in our last notice of these reports, we adverted to this chasm, we little thought that it would ever appear again. Such an omission seems truly strange and unaccountable, we might add, discreditable.

Appended to the tabular statements are copious extracts from communications of the town-clerks, showing the condition of the registration through the State, the practical operation of existing laws on the subject, and the views of the town-clerks in regard to such amendments as may be needed to improve the system. These are well worth the examination of persons interested in the registry system, as showing where the obstacles to its being carried out exist. The American Medical Association has a standing committee, one of the duties assigned to which is that of taking a general charge of the subject of registration in the different States, and reporting annually to the Association. The members of this committee will do well to give the remarks of the town-clerks an attentive perusal, since they must afford them many useful suggestions of a practical nature.

G. E.

ART. XVII.—*Summary of the Transactions of the College of Physicians of Philadelphia.*
From Dec. 1846 to April 1847 inclusive: pp. 72, 8vo.

THIS number of the proceedings of the college contains even more than the usual amount of interesting matter, and shows that the members of the college are zealously occupied in extending the bounds of our science. In addition to an interesting annual report on meteorology and epidemics by Dr. J. W. Moore, and a very valuable one on the Diseases of Children by Dr. Condie, there are contained in this number some instructive cases communicated by Drs. Hallowell, Meigs, &c.

Every contribution to our knowledge of tubercular diseases is so useful, that we give the following summary of two cases, illustrative of the natural history of that affection communicated by Dr. Hallowell.

CASE I.—A child aged two years and three months, of slender habit, born of healthy, but somewhat emaciated parents, is attacked with measles. This attack is succeeded, after a short interval, by one of bronchitis, of six weeks' duration; the cough, which existed during the measles, having never altogether ceased. Recovering from it, it is found that the child has lost flesh, and has a short dry cough, which was not noticed before. These symptoms continue during a space of fifteen months, when remittent fever prevailing to a great extent, it is attacked with that disease; the physical signs of bronchitis, however, exist in a marked degree, and continue during the whole course of the affection. Two months after recovery from this attack, which lasted a month, it is seized, for the first time, and suddenly, with symptoms of meningitis; the most prominent and characteristic of these signs, are severe pain in the head, and vomiting. The pain in the head continues to increase; slight twitchings of the limbs are noticed, followed by strabismus. To these symptoms succeeds coma, which takes place one week after the commencement of the disease. The following day slight convulsive movements of the left arm are observed: these are somewhat increased on the succeeding day, when the right arm becomes rigid. There is also rigidity of the left ankle joint; the respiration on this and the preceding day, is found to be rude over the whole of the chest, and there is more or less dullness on percussion. These symptoms are followed by a slight amendment, and death finally ensues in about ten days from the time when she first complained of severe pain in the head. The autopsy displays the existence of extensive tuberculous disease. Tubercles are found throughout the lungs, the tissue of which, with the exception of the middle lobe of the right, is red and firmer than natural, but still crepitant to a certain degree. They are found deposited in great abundance, not only in their tissue, but upon the surface beneath the pulmonary pleura, and also beneath the pleura, lining the ribs, but to a small extent. The pleura, in neither of these situations, exhibits any signs of inflammation, except upon the opposing surfaces of the upper and middle lobes of the right lung, which are adherent. The bronchial glands are much enlarged and tuberculous. Tubercles are also found beneath the peritoneal investment of the liver, which presents no sign of inflammation. They are deposited beneath the peritoneal coat of the spleen, and imbedded in its substance: they are found also in the sub-peritoneal tissue of the large intestine, to a limited extent. In the brain they are seen beneath the arachnoid, both upon its convex surface and base; they exist also beneath the arachnoid lining the dura mater, where they are few in number, and isolated for the most part. The arachnoid, in the latter situation, presents its natural appearance, being perfectly pale, and not in the least altered in structure. No trace of inflammation is observed around the granulations, or in their vicinity. The arachnoid of the brain is opaque, owing to the deposit of a milky fluid in the cellular tissue beneath; but is not evidently thickened. The pia mater is greatly injected; less upon the base, where the tubercles are less abundant, but to a much greater degree where the deposit is extensive, viz: in the left fissure of Sylvius; on the surface of the anterior and middle lobes of left side, and more especially on the inner surface of the left hemisphere, and on the convex surface of the posterior lobe of the right. The substance of the brain is healthy.

CASE II.—A child aged seven years, delicate from infancy, enjoys good health until the age of fourteen months, when she has an attack of summer complaint,

with bloody stools lasting three months; two years after, she has an attack of intermittent fever, of three weeks' duration, and in about a year after is affected with varioloid. At the age of four years and a half, she has an attack of pleurisy, for which she is under medical treatment four weeks; during convalescence she is observed to complain of pain in her knee, and shortly after of pain in the hip of the same side; the pain in the knee is intermittent; when severe she is observed to flex the joint, drawing the foot under her chair, and if erect, to rest the limb upon the toes; in the intervals of the attacks of pain, she is able to run about as usual. No treatment is pursued during a space of six months from the first appearance of these symptoms; at the expiration of this time, advice is had, when cups are applied to the hip-joint, which is kept at rest, and she is actively purged with cream of tartar and jalap; this treatment is pursued about a month, when it is proposed to put the limb in a carved splint; this, however, is not done, but she is again sent to school, the flexed position of the limb being now constant; she continues at school during a space of fifteen months. When nearly six years old she has an attack of hooping cough; it continues during the summer months, and leaves her with a short dry cough, which was not noticed previously. When at school, in the autumn of 1839, she receives a fall upon the hip, after which the pain is greatly increased, and she is no longer able to leave the house. Three months after this accident, or about four months before her death, she is first observed to complain of pain in her head; the pain at times is acute, and is most severe during the paroxysms of pain in the joint. Forty days before her death, she has for the first time an attack of convulsions lasting several hours, and affecting the whole body; the pain in the head is increased after this attack, but there is no marked disturbance of the cerebral functions, and she is able to go about the house in her usual manner. For several months her sleep at night is much disturbed, and she has more or less fever every evening; the pain in the hip continues to increase until Wednesday, April 30th, when she is seized with a chill in the morning, followed by high fever and vomiting; the vomiting occurs four or five times on the two first, but less often on the two following days, at the expiration of which it ceases. Three days after the invasion of this attack, she is seized with convulsions, the left arm and leg being affected; the convulsions return at intervals on that and the ten following days, or up to the time of her death; on the 7th, the left arm and leg are observed to be paralyzed, the opposite extremity, on the contrary, being much in motion; during the first week of the attack, she takes notice of surrounding objects, and recognizes her parents; on the 9th, there is complete loss of the power of vision, which was probably the case for several days before; the hearing, however, is acute, and she replies correctly to questions that are put to her; her articulation is indistinct; but the power of deglutition is not impaired; the left shoulder and elbow joints are rigid, and the flexor muscles in a state of strong contraction; the sensibility of the left side is obtuse, and there is a slight rigidity of the left ankle joint; the other joints are supple; the pulse is frequent, irregular and intermittent; the respiration accelerated, the bowels costive; in the night she has a strong convulsion lasting several minutes, and affecting the whole body, followed by hemorrhage from the nose, after which she is unable to speak, and the power of deglutition is much impaired; the cries are less frequent, the stupor constant; on the following day, she has repeated attacks of convulsions, occurring at short intervals; after the first of these, the intelligence appears to have been completely destroyed; when questions are put to her, she takes no notice of them whatever; there is strabismus of both eyes; and the pulse and respiration are increased in frequency; the convulsions on the eleventh assume a tetanic character, the extensors of the upper extremities being thrown into a state of powerful contraction; the motions of the right arm are less frequent, its joints having become rigid, and there is a return of rigidity in the left shoulder and elbow-joints, with slight contraction of the muscles; the neck and lower jaw are also rigid; the pulse continues to increase in frequency, and is diminished in volume; there is marked oscillation of the pupils; coma profound; the bowels continue costive. Death ensues on the 12th, thirteen days from the commencement of the acute attack, characterized by fever, pain in the head, and vomiting. The autopsy presents the following lesions. The pia mater of the convexity of the brain is highly injected, the injection extending to the minutest ramifications;

the arachnoid is pale, and the sub-cellular tissue is slightly infiltrated with a milky serum; beneath it, and apparently imbedded in the pia mater, are numerous granulations, varying in size from a mustard seed to a line or more in diameter; they are more abundant, and of larger size upon the surface of the middle and posterior lobes near their point of contact; but few are seen upon the anterior lobes, where the injection is also less marked; at the base they are found abundantly in the fissures of Sylvius, to a greater extent in the left than in the right, and a few are seen upon the under surface of the middle and posterior lobes, and also beneath the arachnoid lining the dura mater; the base of the brain is but little injected; the pia mater surrounding the optic nerves, is opaque from infiltration, of a milky fluid in its tissue; the substance of the brain is somewhat injected; its consistence is normal throughout; the ventricles contain about an ounce of limpid serum. The lungs are slightly engorged, and with the exception of two very small granulations in the upper lobe of the right side, contain no tubercles; a few granulations are noticed upon the surface of the right pleura, which is adherent throughout. The bronchial glands are tuberculous, and contain a quantity of calcareous matter. The coats of the stomach present a remarkable thinness in its great cul-de-sac, and the mucous follicles are unusually developed; the consistence of the mucous membrane is diminished in the thinned portion, and there is also some softening of the lining membrane of both the small and large intestines; the mucous crypts are likewise very apparent. The mesenteric glands are enlarged but not tuberculous; the bladder contains a quantity of whitish-coloured urine, and its lining membrane is slightly injected and thrown into folds. The liver, spleen, pancreas, and uterus are healthy.

ART. XVIII.—*Report of the Committee on Medical Societies and Medical Colleges relative to the Bill proposing the establishment of an Asylum or School for Idiots, &c.*

THE honour of being the first to lead the way in philanthropic efforts for ameliorating the physical and moral condition of that unfortunate class of human beings, Idiots, whose condition was formerly regarded as utterly hopeless, belongs to the French and the Germans; and the credit of being the first on this side of the Atlantic, in the same laudable enterprise, must be awarded to the enlightened state of New York.

The committee appointed by the legislature of that state, in their report, remark that, they "feel deeply sensible of the great amount of evidence necessary to do away with the strong impression resting in the mind of every man that nothing can be done for the idiot. Such is the universal opinion of all those unacquainted with what has been done, and successfully done for their elevation. But we cannot but believe that sufficient evidence of a satisfactory character has been offered in this report, and the one made by your committee last year, to satisfy any candid mind of the entire feasibility of the project."

In our preceding number, we published a deeply interesting account, by Dr. B. Brown, of the institution for the education of idiots in Berne, and the success which has attended it. In Prussia, equal success has been met with. "So fully assured," says a late German paper, "are the Prussian government of the complete efficacy of the system, that a portion of the Deaf and Dumb Institution at Berlin, is to be set apart as an hospital for idiots, where the most effective methods of education can be tested and carried out. All were imbeciles intrusted to the care of M. Sargent: they were twelve in number. After the lapse of some months, those who could hear, were learning to speak; some were beginning to draw and write, and some to sew; others played most naturally, and sang and danced as other people; all appeared neat and cheerful, improved both in mind and body. A deaf boy, who was one of the worst cases, washed and dressed himself daily without assistance, and was learning to draw; he made his picture upon a slate, and evinced quite a passion for the employment. Most of them appeared in a hopeful way to attain ultimate restoration to the rank and society of rational beings. M. Seguin (of Paris) was also intrusted with the care of ten idiots, who were inmates of the Hospital of Incurables, and who formed the subjects of his expe-

riments. In his observations, or treatise, he gives a lucid statement of the moral and intellectual condition of his *élèves*, also accurately describing their habits. His task was an arduous one, and such as would have made many an individual shrink from attempting. He had to encounter a Babel of discordant sounds, hideous and unearthly cries, and the most determined resistance at first to control. But, in spite of every difficulty, his labours were attended with the most marked success, as the following will show in his own words. He says:—‘1st. I have developed and applied, as much as the material means have permitted, the muscular system of the children. 2d. The nervous irritability of several has disappeared, or sensibly diminished. 3d. They have walked, run, jumped, and begun different gymnastics, so useful in early years to young children. 4th. They have learned to seize hold of, handle, throw, and carry burdens, the weight of which surpassed the strength of their age. 5th. Five among them have learned to read, write, count, to ascertain limit, which permits us to hope that they can still be improved by instruction. 6th. Their notions have become precise and enlarged. 7th. Ideas have begun to form themselves, and to be made manifest in their conduct and speech. 8th. Obedience and morality, which were both to be created, have begun to regulate part of their acts and of their existence. 9th. Several are sought for in the establishment to perform manual labours, in preference to older persons, and are employed to work in the gardens. 10th. During the six months, nine of my children have been severely ill, and the health of all is strengthened.’ On a calm review of the labours of this excellent man, we cannot but be struck with the fact, that obstacles which formerly appeared insurmountable in the education of idiots have been overcome, and the development of hidden powers have been made apparent, to an extent quite beyond human calculation.”

Dr. RAY, in an article in the *American Journal of Insanity*, gives the following account (quoted in the report), of the school for idiots near Paris.

“At Bicêtre, I spent an hour or two in the school of idiots, which has been instituted and carried on under the superintendence of Dr. Voisin. As early as 1828, Ferrus made the first attempt in France to develop the powers of idiots, which attempt has resulted in the present school of Voisin, which exhibits to the astonished and gratified spectators, a triumph of perseverance and skill in the cause of humanity, that does infinite credit to the heart and understanding of that gentleman. For many years he has directed his attention to the relation between the physical organization of children, and their moral and intellectual faculties. *He believes that every mental and physical talent, at all under the influence of the will, is susceptible of development and improvement within definite limits.* This principle he has applied to the education of idiots. For this purpose, these unfortunates have been sent, in large numbers, to this institution, and subjected to a regular course of training by Dr. Voisin, and his assistants. I found about eighty of them, from six to fourteen years old, in the school room, with their teacher, Vallee, going through the ordinary routine of their exercises. These, I observed, were frequently changed, for the purpose of calling different faculties into play, without fatiguing any, and by blending instruction with amusement, physical exercise, and agreeable impressions on the senses, the interest was constantly sustained, and the attention was kept alive. At one moment, a question in arithmetic or spelling was answered simultaneously; at another, they drew geometrical figures on a blackboard; at another, they marched around the room at the tap of the drum, beat by one of their number, and anon went through some military evolutions, rather complicated, that quite outdid the highest tactical achievements of our New England militia. These exercises were interspersed with divers games and feats of skill, such as leap-frog, fencing, jumping over a stick, &c., in which each one strove to do his best; finally, singing in unison, they left the room, and proceeded to their breakfast, whither we followed them. Here each one took his place at the table, and another song was sung, when they sat down and partook of their meal quietly and orderly. I have seen many a school of ordinary children, in which good manners and correct behavior were a less prominent trait than in this. From the breakfast room, they went to play in the yards, and thence to their respective trades and occupations; and thus, in a constant round of interesting exercises, calculated to cultivate some moral, intellectual or physical power, their time is passed. In the course of my visit, Charles Emilie, whose case is

described at some length by Dr. Conolly, came up and exhibited his proficiency, which, considering the desperate nature of his case, was certainly remarkable; on the blackboard he drew several geometrical figures as they were named to him, and again told their names when their representations in wood or card were pointed out to him. He counted, sang, and wrote upon the blackboard. His copy-book showed as much improvement as is witnessed in those of most ordinary schoolboys, and had been kept full as clean and smooth. As soon as they are old enough, they are taught a trade, and judging from specimens of their work, it was obvious they had been taught to some purpose. Some of their shoes were creditable specimens of the art."

We trust that the recommendations of the committee of the New York legislature will be fully carried out, and that liberal appropriations will be made for that purpose.

In the language of a late writer on this subject, we may exclaim, "what an amount of misery may be relieved in this our fallen world, by the establishment of kindred institutions to elevate the creature from his isolated, forlorn, and hopeless condition, to the social pleasures of life, the pursuits of science, and the advantages of education! How dignified the pursuit, to commence and co-operate in a work so great, so noble, so distinguished, which shall have for its object the expanse and growth of the intellect, from the atoms of sunk humanity, and raise the standard of the mental and moral condition, so as to render existence a pleasure, not a curse!"

ART. XIX.—*Water versus Hydropathy; or an Essay on Water, and its true relations to Medicine.* By HENRY HARTSHORNE, M. D. Ἡ δὲ τέχνη μακρή. 12mo. pp. 131: Philadelphia, 1847.

THE object of this publication is to inquire into the positive and proper uses of water in medicine, and the degree to which these are appreciated, and the estimation in which they are held by the profession; thus opposing the error of Preissnitz and his followers, by an exposition of the actual remedial powers of water, and of the circumstances under, and the extent to which, those powers may be made available for the cure of disease.

The plan is a very excellent one:—in carrying it out to its full extent, justice would be done to the medical profession, by showing that its members have never been ignorant of the therapeutical properties of water, but have always availed themselves of them, to a very great extent, in the treatment of disease; and that, with a more accurate appreciation of the extent of those properties, and the conditions of disease in which they are the most certainly and strikingly exhibited, the employment of water as a remedial agent, is becoming more frequent, and its importance more apparent; while, on the other hand, the perfect absurdity and dangerous consequences of trusting to it alone, as the sole and certain remedy in all diseases, would be effectually exposed, by showing in what manner water acts in the removal of disease, with the circumstances under which its remedial action may be expected to take place, and those under which no such action can be anticipated.

Of the plan proposed by Dr. Hartshorne, he has in the essay before us merely sketched the outlines, which, with more time and greater space, he would, no doubt, have filled up and completed more to his own satisfaction. His views and illustrations, though thrown together carelessly, and often loosely expressed, are in the main correct, and it is evident that had he not confined his exposition of the leading topics embraced in the proposed inquiry within too narrow limits, he would have done himself greater justice, while his general conclusion, that, namely, hydropathy is a delusion of a most dangerous character, would have been even more fully sustained.

D. F. C.

ART. XX.—*Lectures on the Principles and Practice of Physic; delivered at King's College, London.* By THOMAS WATSON, M. D., F. R. C. P., &c. &c. Third American from the last London edition. Revised, with Additions, by D. FRANCIS CONDIE, M. D., Lec. Coll. Phys., &c. &c. Philadelphia: Lea & Blanchard, 1847: pp. 1040, 8vo.

WHEN it first appeared, we expressed the very high value we entertained of this work. (See number for January, 1844, p. 183.) Its merits are now so generally known, and universally acknowledged, that it would be entirely supererogatory to say a word in its praise. No work, on the practice of medicine, that has ever appeared, probably, has received so generally the suffrages of the medical press; and the rapid exhaustion of two very large editions of it, unequivocally shows the estimate in which it is held by the professional public. That it will long maintain its position, we venture little in asserting.

We must not omit to say, that the editor's additions, as might be expected from his well-established reputation and extensive experience, are judicious and valuable. He has given an account of one or two of our endemic diseases, and supplied fuller descriptions of several affections, which, being much less prevalent in Great Britain than in this country, are not so fully treated of by the author, as would be desired here; and, finally, he has pointed out such modifications of treatment, as experience has shown to be best adapted for the cure of diseases, as they occur in this country. In short, the aim of the editor has been to render the work a safe guide to the American practitioner.

ART. XXI.—*Essays, Anatomical, Zoological, Surgical, and Miscellaneous, reprinted from the Philosophical Transactions, Transactions of the Medico-Chirurgical Society of London, Dublin Philosophical Journal, Dublin Hospital Reports, Reports of the British Association for the Advancement of Science, and the Dublin Medical Press.* By ARTHUR JACOB, M. D., F. R. C. S. J., Professor of Anatomy and Physiology, and Lecturer on Comparative Anatomy in the Royal College of Surgery in Ireland, &c. &c. Dublin, 1845: pp. 174, 8vo. Plates IV.

THE name of Professor Jacob is inseparably associated with ophthalmological science, by his discovery of a new membrane in the eye, and his numerous contributions to the pathology and therapeutics of this important organ. The volume before us, contains twelve essays. Having been originally published in transactions and journals of limited circulation, the author has correctly thought that it would be useful to give them in their present form. The papers on the anatomy of the eye contain the results of dissections conducted with great care, for the purpose of removing doubts and correcting errors, and are deserving of attentive study. The essay on the diseases of the eye, as a guide in the study of pathology, is also worthy of particular attention. The aim of the author is to restore this department of surgery to its original place in medical practice, and to prove that the study of diseases of the eye is eminently calculated to improve our knowledge of the nature of disease in other parts of the animal frame, and therefore that it is a branch of medical education worthy of particular encouragement. He briefly points out the value of the information to be derived from observation of the functions of the different parts, composing the organ of vision in a healthy state, with a view to the investigation of the phenomena of life in the animal economy in general, and explains why it is that the parts of this organ are particularly suited to that object; and then shows that it is from observation of the eye in a state of disease, and especially in a state of inflammation, that information still more valuable, may be acquired.

Professor Jacob has laboured long, and, we believe, successfully to establish the importance of ophthalmic medicine, and we wish some one of equal ability would arise in this country to advocate the same cause. It is impossible, however, that students should appreciate the value of this department of our sciences, so long as they are dependent, for all their knowledge regarding it, on the general course

on surgery, in which it is farcically pretended to be taught in two or three lectures, instead of being fully developed in a separate course, as is the case in most of the German, and some of the British schools. Chelius, in the preface to his *System of Surgery*, says, "I must not be blamed for having omitted diseases of the eye and ear, for ophthalmic surgery has attained so great importance as to require a special treatise; and, like many other teachers, I deliver a separate course of lectures on diseases of the eye and ear."

ART. XXII.—*On Diseases of the Skin*. By ERASMUS WILSON, F. R. S., Consulting Surgeon to the St. Pancras Infirmary, Lecturer on Anatomy and Physiology, &c. &c. Second American, from the Second London edition.

It is unnecessary to repeat the favourable opinion already expressed (number for July, 1843, p. 170), of this work; but it is proper to state, on the appearance of a new edition, that this has been much improved, and has the farther advantage over its predecessor, of being illustrated with accurate, and most exquisitely finished coloured delineations. The plates, eight in number, each represent a group of diseases, and are so arranged that no less than sixty-one subjects are represented. Both as a guide for the diagnoses of the diseases of the skin, and for the treatment of these often troublesome affections, we know of no work which we can more highly recommend to the practitioner and student.

ART. XXIII.—*Outlines of the Veins and Lymphatics: with short Descriptions. Designed for the Use of Medical Students*. By JOHN NEILL, M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. Philada.: Ed. Barrington and Geo. D. Haswell, 1847, pp. 29. Plates VIII.

THIS volume is designed as a companion to the two, of a similar kind, on the arteries and nerves, noticed in our numbers for Oct. 1845, p. 425, and for April, 1846, p. 438. As in the former publications, the principal vessels only are given, and the names are placed upon or near them, so as to avoid the inconvenience of the usual mode of reference. Like its predecessors, this volume is a convenient aid to the student just commencing the study of anatomy.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Death from an impermeable covering of the Skin.*—The importance of the function performed by the skin, is perhaps scarcely sufficiently appreciated. The experiments of Becquerel and Breschet show that animals whose skins are covered with an impenetrable coating, speedily die. (See Number of this Journal for Oct. 1842, p. 445.) Any cause which interrupts the functions of a considerable portion of the cutaneous covering of the body, is productive of serious consequences. Thus extensive blisters, especially in children, are productive of very ill effects. Burns, also, are, as a general rule, serious in proportion to their extent. The late Dr. Physick used to mention in his lectures, a case in which a child fell into a tub of hot water, in which the mother was washing, with a fatal result.

M. MOJON, at a late meeting of the Medical Society of Emulation of Paris, stated that a child whose body had been covered with gold leaf, for a figure in a procession, died the same night.

2. *On the Function of the Red Corpuscles of the Blood, and on the Process of Arterialization.* By GEO. OWEN REES, M. D.—(*Proceedings Royal Soc.*, June 3d, 1847.) The author states that he was first led to the new theory he has formed for the explanation of the chemical phenomena of respiration, and more especially of the change in the colour of the blood which occurs in that process, by having observed that a garlic odour, similar to that evolved from phosphorus, was produced by agitating in distilled water, the clot obtained from some specimens of venous blood. His attention was consequently directed to the investigation of the state in which the phosphorus exists in the blood; and the result of this investigation was the theory, of which the following is a succinct outline.

The venous corpuscles are known to contain fat in combination with phosphorus. This compound ingredient of the corpuscles, on coming into contact with atmospheric oxygen during the respiratory act, is consumed, and combining with that oxygen, forms the carbonic acid and water which are expired, and also phosphoric acid, which, uniting with the alkali of the liquor sanguinis, forms a tribasic phosphate of soda. This salt, like many others, acts upon hæmatosine in such a manner as to produce the well-known bright arterial tint.

The analyses which the author has performed, in order to test the correctness of this theory, were made upon the blood, both of the veins and of the arteries, of the same animal; and also upon separated portions of the same venous blood; one of which portions had been artificially arterialized by having been brought into contact with air, while the other portion had not been so exposed. These comparative experiments showed that arterial blood, both when obtained from the vessels, and when artificially produced, contains in its serum a larger proportion of tribasic phosphate of soda than that obtained from the veins. The venous

corpuscles, as they are contained in the clot, yield a fatty matter combined with phosphorus; while those from arterial blood yield a fat, the ashes of which manifest an alkaline reaction. Thus the venous corpuscles are shown to be acted upon both by respiration, and by the artificial arterialization of the blood, in such a manner as to lead to the formation of tribasic phosphate of soda, at the expense of the phosphorus they contain.

No exact quantitative analyses were attempted by the author, the comparative experiments having been performed on small portions only of serum (from 25 to 40 grains); sufficiently large, however, to furnish satisfactory evidence of the actual presence of the phosphate in arterial blood, and also in those portions of venous blood which had been arterialized out of the body; while no such indications were obtained from similar portions of the blood contained in the veins.

At the conclusion of the paper, the author notices the experiments of Enderlin, in which no alkaline carbonate could be detected in the ashes of blood; and shows that this is the natural consequence of the phosphates of the clot being oxidized during combustion, and thus supplying a quantity of phosphoric acid sufficient to decompose completely the alkaline carbonate produced by the incineration of the lactate and albuminate of the serum. Most specimens of serum, even as obtained from arterial blood, yield an alkaline carbonate when incinerated; and this is always the case with the serum of venous blood. The author, therefore, thinks himself warranted in regarding the conclusion founded on Enderlin's experiments, that the blood contains no lactate, as being erroneous.

3. *On the entrance of Insoluble Substances from the Intestinal Canal into the Blood-Vessels.* By Prof. OESTERLEN.—In some recent experiments Prof. Oesterlen administered, for five or six days in succession, to five rabbits, a cat, and two young fowls, a certain quantity of wood-charcoal in their food. The charcoal was reduced to the finest possible powder, and was rubbed up with water. About an ounce from first to last was taken by the rabbits; rather less by the other animals. Oesterlen preferred charcoal for his experiments, owing to there being no doubt about the complete insolubility in the intestinal canal, and owing to the circumstance of the smallest particles of this substance being distinguishable by their deep and uniform colour, and by their peculiar forms; the points and edges on their surface preventing their being mistaken for particles of pigment. In all the experiments, the excrements voided from the animals were coloured black.

After administering the charcoal for five or six days, the animals were severally strangled, and the blood of each was examined. One of the mesenteric veins was in the first place opened, and a drop of blood removed therefrom on to a slip of glass, carefully cleaned from all trace of dust and charcoal, and then examined beneath the microscope. In such cases, it was noticed that in a portion of the blood, extending over not more than half a line of surface, there were from three to six particles of charcoal, which were in all respects similar to those of the charcoal administered. The smallest and most abundant of these particles were not more than from 1-300th to 1-200th of a line in diameter; others, however, and by no means a few, were from 1-30th to 1-100th of a line in length, by 1-180th to 1-150th in breadth; whilst others, again, appeared so large, that it is a matter of wonder how they could have made their way into the blood through epithelium, mucous membrane, and the walls of the blood-vessels. For example, some were 1-60th, 1-42d, and even more, of a line in length, and almost equally as broad. Many appeared as blocks, with ragged edges, or with teeth, spines, or tail-like processes projecting from them; others were distinctly triangular: and in many the pores were clearly discernible, so that the particles of charcoal could not be mistaken for pigment cells. Similar particles were also found in tolerably abundant quantity in blood from the trunk of the portal vein; also in the blood-coagula of the right side of the heart, in the liver, the lungs, the spleen, more scantily in the kidneys, and lastly in the inferior cava. In the cat, the contents of the thoracic duct were examined, but no trace of charcoal was found therein; the quantity found in the blood, and in the several organs of this animal, was also much smaller than in the rabbits and fowls. None of the charcoal could with certainty be recognized in either the urine or the bile; no alteration could be detected on the mucous surface of the stomach, or intestinal canal, or in any of the

other organs or blood-vessels: the whole intestinal mucous surface had of course a blackish-gray colour.

That other insoluble substances besides charcoal can be absorbed into the blood, was shown by experiments on two rabbits and a young fowl, to whom recently-precipitated Prussian blue was administered with their food. The excrements were coloured blue; and after death there were found in the blood of the mesenteric veins, of the portal vein, as also in different organs of the body, a considerable quantity of roundish dark particles, which exactly resembled those of Prussian blue, and around the margins of which, when highly magnified, a bluish lustre appeared. Neither Prussian blue, however, nor cinnabar, nor any other red or yellow substance, is so well suited for these experiments as charcoal, since their molecules do not possess such a characteristic form as those of charcoal do, and their peculiar colour becomes manifest only when many of them are heaped together.

The general conclusion which must be derived from the results of the above experiments seems to be that, contrary to the prevailing opinion, solid insoluble substances may be taken up from the intestinal canal into the blood-vessels.—*Lond. Med. Gaz.*, July, from *Heller's Archives*, Bd. iv. heft 1.

4. *Researches on the Nervous System*.—M. C. ROBIN communicated to the French Academy of Sciences, 21st, June last, some researches on the two orders of elementary nerve tubes, and the two orders of ganglionic globules which correspond to them. The object of these researches is to demonstrate that the ganglions of the spinal nerves and of the great sympathetic do not give origin to elementary nerve-tubes, as many modern anatomists admit,—as Valentin, Remak, Bidder, and Volkmann, &c.,—but that all nerve-tubes arise exclusively from the spinal cord and encephalon; consequently, that one can only regard these ganglions as special little nervous centres, performing, with respect to certain functions, the same office as does the cerebro-spinal axis for the other functions. These reflections naturally occur to the mind, when one sees the cavity of the tubes, or elementary nerve-fibres, given off from the spinal cord, or from the encephalon, merge into the cavity of the cells of the ganglion—(ganglionic globules,) at one of their poles, to reappear at the opposite pole of the cell, in the same manner as they entered.

Setting out from a cell, (globule,) these nerve-tubes proceed to lose themselves in the organs. Thus those peculiar cells, the agglomeration of which constitutes nervous ganglions, are no other than organs which are interposed between the origin of the nervous tube and its termination at a determinate point of its course; and perhaps there is not more than one on each tube: they arrest it in its course, but allow it once again to re-appear; they change it, they modify its structure at a point, to immediately restore it again.

Authors who have written on this matter have, hitherto, not observed the entrance and exit of each elementary tube at the two opposite poles of each globule, but only one or the other. Hence they have formed the opinion, that each of these cells of ganglions is a little nervous centre of origin for each tube.

There is yet a more important fact overlooked by others. But one kind of cells has been described, although there are two, the one kind differing from the other in numerous characters, deducible from the consideration of form, volume, contents, walls, &c. One of these two kinds of globules is always in connection with the elementary nerve-tubes of animal life, or the large tubes; the other is specially associated with the elementary tubes of organic life, or the sympathetic and their tubes. This mutual relation is constant, and this confirms the opinion of their being the two orders of elementary nerve-tubes, just named.

The two orders of globules, and their corresponding tubes, exist in the ganglions of the posterior or sensitive roots of the spinal nerves; but the globules do not exist in the anterior or motor roots.

They also exist in the ganglions of the encephalic nerves, and in those of the sympathetic; only in the latter there is a much greater number of globules and of delicate tubes than of globules and large tubes—about thirty or fifty to one, more or less, according to the ganglions. In the ganglions of the spinal marrow, on the other hand, there are about four or five globules and large tubes to one of the other description.

These facts contribute to confirm the observations of anatomists, who have pointed out the existence of two orders of elementary tubes in the nerves of animal life and in those of the sympathetic: but the large tubes predominating in the former, the thin ones in the latter.

The absence of ganglionic globules on the anterior or motor roots of spinal nerves anatomically distinguishes the elementary tubes of motor nerves of animal life from those of sensitive nerves. But this decisive character can be remarked only so far as where the anterior and posterior roots unite. If, to push the theory further, we were asked what functions we would attribute to the cells of the ganglia, we should answer that they are the modifiers of the action which goes on in the sensitive and in the organic nerves; but that it is impossible to form an idea of the nature of such modification.

Since the ganglia of the sympathetic and of the cerebro-spinal nerves enclose the same sorts of ganglionic globules, and the same elementary tubes, but only in different proportions, we see that we cannot, with Reil and Bichat, &c., conceive two independent nervous systems. This opinion is founded on the communications of the great sympathetic with the spinal nerves; on the fact that the sympathetic exclusively furnishes the nerves of the diaphragm of birds; on the partial and successive substitution of sympathetic nerves for spinal and encephalic in a great many vertebrata.

ORGANIC CHEMISTRY.

5. *Nature of the Colouring Matter of the Bile.* By M. BLONDIOT.—Tiedemann and Gmelin, as well as most modern chemists, consider that the colouring matter of the bile, as also all other colouring matters of organic origin, present tints which increase or diminish in depth according as they contain more or less oxygen; and that the transition from yellow to red, green, blue, and violet, which the colouring matter of the bile manifests under the influence of certain reagents, is due essentially to oxidation. It seems more probable, however, that carbon, and not oxygen, is the substance which must be regarded as the principal agent concerned in the production of colour in these organic matters. For example, it is well known that, when concentrated sulphuric acid is placed in contact with almost any organic substance, it destroys such substance, and, at the same time, acquires a more or less black colour. This circumstance depends, without any doubt, on the great affinity of sulphuric acid for water, the formation of which it determines at the expense of the oxygen and hydrogen of the organic matter; so that the carbon, being rendered more and more predominant, finally appears with its characteristic black colour. Now, if one examines with attention the phenomena which are manifested in this simple experiment, it will be readily perceived that the colour becomes black only by degrees, and after having passed through different shades of yellow, red, brown, and violet. It is indeed true that these various tints are not well marked, and appear to be confounded one with the other; nevertheless, there are some substances which, treated thus with sulphuric acid, produce much more strongly marked colours: such, for example, are the resinous substances, and especially the biliary resin. If a small quantity of this substance be placed in concentrated sulphuric acid, it will be observed, during its decomposition, to present a series of distinct and well-marked colours. The liquid becomes at first yellow, then orange, red, lilac, green, blue, or violet, and, lastly, black. Now it is evident that in this case the colouring matter has acquired a tint the depth of which has increased in proportion as the carbon became more predominant. And analogy leads to the conclusion that a similar view may be held in regard to other colouring matters of organic origin. The colouring matter of the bile, therefore, is deeper according as it is richer in carbon; and, in cases where the colour is very dark, the colouring matter appears to consist almost entirely of carbon. This is well shown also in the fact pointed out by Berzelius, that there exists one kind of biliary calculus which appears to be principally composed of carbon.—*Essai sur les fonctions du foie.*

6. *Colouring Matter of the Bile.*—POLLI, one of the most energetic of the Italian physiological chemists, has recently published (in his own Journal) a memoir on the nature of the colouring matters of the blood and bile. The following are his principal conclusions:

1st. The yellow pigment of the bile and the red pigment of the blood, are one and the same substance in different stages of oxidation.

2d. The occasionally green and occasionally yellow colour of the bile contained in the fæces, the different tints in the skin in jaundice, and the change of colour observed in ecchymoses, are all dependent on different stages of oxidation of the same pigment.

3d. The red colouring matter of the blood is converted into yellow during its retrograde metamorphosis; the yellow pigment being in fact hæmatin that is no longer of service in the system, or has become excrementitious.

4th. The yellow pigment appears to be formed in part within the vascular system by a direct metamorphosis of the hæmatin of the corpuscles: taking place slowly in healthy persons, but rapidly in jaundiced ones. In both cases a corresponding quantity of it is discharged by the urine. The remainder of the yellow pigment is formed in the liver from the blood or its colouring matter by a process of reduction.—*Day's Report, in Ranking's Abstract, from Annali di Chim., Jan. 1846.*

7. *Detection of Mercury in the Pus from a Bubo.*—In order to disperse a bubo, a man had been ordered to rub in several ounces of mercurial ointment. Poultices were applied, and when the gland was opened, the pus was collected and analyzed. It yielded unequivocal traces of quicksilver.—*Lond. Med. Gaz., July, from Heller's Archiv., 1847, H. 2. S. 185.*

MATERIA MEDICA AND PHARMACY.

8. *Citrate of Magnesia as a Purgative.*—M. RAGE DELABARRE, in making some experiments with salts of magnesia, had occasion to observe that the citrate of magnesia is devoid of the bitter and disagreeable taste which characterizes the other salts of this base; he has hence been induced to recommend it as a purgative. "It may be obtained," he says, "in two different ways. It may be made by double decomposition from sulphate of magnesia and citrate of soda, or by saturating a solution of citric acid with magnesia or the basic carbonate. If it be prepared by saturating a solution, somewhat concentrated, of the acid, the liquor which is at first liquid and transparent, becomes in an instant a hard mass, adhering strongly to the sides of the vessel in which the combination is effected. This arises, probably, from the water which at first holds the salt in solution, passing to the state of water of hydration.

The neutral citrate of magnesia, prepared by either of the processes above described, is a white pulverulent insipid salt, soft to the touch, heavier than magnesia, and soluble in water aided by the addition of a slight excess of the acid. This solution has a slightly acid taste, but is in no way disagreeable.

M. Delabarre proposes the following formulæ for the administration of the citrate of magnesia:—

No. 1 (mild).

		grammes.	grains.
Citrate of magnesia,	- - - - -	40	= 617.360
Citric acid,	- - - - -	2	= 30.868
Simple syrup,	- - - - -	125	= 1929.252
Essence of orange,	- - - - -	q. s.	
Water charged with carbonic acid,	- - - - -	q. s.	

to fill a common mineral water bottle, containing 750 grammes (about the size of a wine bottle).

No. 2 (strong).

		grammes.	grains.
Citrate of magnesia,	- - - - -	50 =	771.701
Citric acid, - - - - -	- - - - -	2½ =	38.585
Simple syrup, - - - - -	- - - - -	150 =	2315.103
Essence of orange, - - - - -	- - - - -	q. s.	
Carbonic acid water, - - - - -	- - - - -	q. s.	

for a wine bottle.

The following is the formula for making 100 bottles of the above, each containing 50 grammes, or 771 grains of the citrate:—

Dissolve 6 pounds 9 ounces and 364 grains (avoirdupois weight) of crystallized citric acid in 22 pounds of water, and add to the solution 1 pound 5 ounces and 83 grains (avoird.) of calcined magnesia. When the combination has been effected, filter the solution, and add to it 33 pounds (avoird.) of simple syrup flavoured with essence of orange. Distribute this solution in one hundred wine quart bottles.

Then precipitate 2 pounds 10 ounces and 145 grains (avoird.) of sulphate of magnesia, with a sufficient quantity of carbonate of soda, in the usual way: wash the precipitate, put it into a proper apparatus, with about 90 pints of water, and pass carbonic acid through it until the magnesia is dissolved. This being effected, use the solution thus formed to fill up the bottles into which the previous solution has been put.

MM. Renauldin and Soubeiran, in their report on the above mineral water state:—"The proportion of magnesia in the citrate is sensibly the same as that in an equal weight of the crystallized sulphate, but the former salt is not so powerful in its medicinal effects as the latter, the fifty grammes or 771 grains of citrate contained in the bottle of mineral water, being about equal in effect to thirty or thirty-five grammes (463 or 540 grains) of crystallized sulphate.

Notwithstanding the large quantity of citrate in the mixture, the taste does not at all indicate the presence of any salt; it resembles lemonade in flavour, and acts as a purgative, quite as well as the ordinary Seidlitz water. It certainly affords, from its agreeable taste, a good method of overcoming the repugnance of some patients to purgative medicines. It occasions neither thirst nor tenesmus, and but little pain during its operation; it may therefore be said that it operates safely and agreeably. Our observations would indicate that the proper dose of the salt is forty-five grammes (694 grains) for a man, and forty grammes (617 grains) for a woman.

In the preparation of the magnesian lemonade, according to the above formula, the first part of the operation consists in making a citrate of magnesia with excess of acid. In the second part of the process, part of the free citric acid is saturated with the carbonate of magnesia, carbonic acid being at the same time set free so as to make it an effervescent water, while there is sufficient uncombined citric acid to give it an acidulous taste.—*Dub. Med. Press*, Aug. 1847, from *Pharm. Journ.*

9. *Dressing of Blisters.* (*Monthly Journ. Med. Sci.*)—Dr. D. MACLAGAN has been in the habit, for some years, of dressing blisters with cotton wadding, instead of the ordinary ointments, and has found it, he says, very convenient in practice. His plan is the following: after a blister has been applied for the requisite number of hours, it is to be removed, and the part covered for two hours with a soft warm poultice of bread and milk. The effect of the poultice generally is to make the vesication more complete, and at the same time to moderate the tenderness of the blistered part. When the poultice is taken off, the vesication, if it has not burst spontaneously, is to be cut so as to discharge the serum, and then a thick layer of soft cotton wadding applied over the part with the undressed or woolly surface next the skin. If, in the course of a few hours, this should become soaked with the serous discharge from the blister, so much of the cotton may be removed as can be done without disturbing the loose epidermis beneath, and the whole again covered with a dry layer of cotton. This is all the dressing which is in general requisite. The cotton is allowed to stick to the skin of the blistered part, and when a fresh layer of epidermis is formed, which takes place very readily, the old epidermis and cotton come off together, leaving a smooth whole surface below.

The advantages of this plan he states to be:—first, that it renders the blister much less painful and annoying to the patient than when unguents are used. The tenderness in fact is comparatively so trifling, and the protection by the cotton so good, that he has been enabled, without annoyance to the patient, to percuss freely, and apply the stethoscope firmly over blistered parts which had been dressed for the first time only an hour or two previously: secondly, the blisters heal faster under it than under dressings with cerate; for, although the cotton may remain adhering for some days, he has generally found that within twelve hours the patient ceases to feel the blister a source of annoyance. Lastly, it dispenses with the greasy applications so disagreeable to patients of cleanly habits.

10. *Cusparia* or *Angustura*. By ROBERT DICK, M. D.—This is a warm tonic, extremely useful in cases exactly fitted for it, but sometimes producing much febrile excitement. In France, it is regarded as a tonic of about equal power with calumba, quassia, and simaruba; but it differs considerable from these, and is far more stimulating. If we might borrow from the vocabulary of Giacomini, we should describe cusparia as a very pure gastro-enteric hypersthenic; in other words, a tonic, approaching, as nearly as possible, to a stimulant of the mucous membrane of the stomach and bowels. It is peculiarly indicated in atony of the stomach and bowels, accompanied with an exsanguine condition of the mucous membrane. But in debility of the digestive organs from an active cause—that is, depending on, or accompanied by, the slightest degree of pyrexia and capillary congestion, it is contraindicated. In mucous diarrhœa of a passive character, it is useful; also in cases of simple flatus, as of that of a gentleman who now consults me. The colon becomes distended with large quantities of gas, entirely devoid of smell, but the presence of which proves extremely irksome to him,—a young man, of nervous temperament, and exercising a profession which requires him to speak in public.—*Lancet*, July 3, 1847.

11. *On the Properties of the Iberis Amara*.—DR. SILVESTER communicated to the south-eastern branch of the Provincial Medical and Surgical Association, at their last annual meeting, a paper on the virtues and properties of the *Iberis Amara*, or Candytuft, a remedy brought to light by the late Dr. Williams during a course of therapeutical researches at St. Thomas's Hospital. Many striking and remarkable cases were related in proof of its salutary power over asthma, bronchitis, dropsy, and more especially cardiac hypertrophy. It seems that it does not diminish the velocity of the heart's action like digitalis, but that it possesses the property of controlling the violence and sharp action of the organ, and softening the pulse; hence its great value in hypertrophy with dropsy.

Dr. Silvester had prescribed it for ten years in numerous instances of the above-mentioned diseases, always with some benefit, and sometimes with almost magical efficiency. It ought not, as the author of the paper well observed, to be administered rashly, as is too often the case with new remedies; for then, from its frequent failure, it would be, as it had been before, as rashly laid aside. A careful adaptation of the remedy to the disease, or its symptoms, was essential to its success; no ill effects followed its use; it occasionally induced giddiness, sickness, or diarrhœa, but these subsided on discontinuing the medicine. Its curative power was not dependent on such occasional consequences of its administration, inasmuch as its control over the abnormal action of the heart was equally evident whether these effects were absent or present; its influence being like digitalis, belladonna, and some other natural agents, of a purely specific character. The dose prescribed was from one to three grains, generally mixed with cream of tartar, which concealed the nauseousness of the taste, and secured a perfect trituration and division of the tough seed.

The leaves, stem, and root, possess similar properties; but from convenience, and from their greater relative strength, the seeds were the parts of the plant chiefly employed. *Iberis* is a family of plants belonging to the order Cruciferæ. The *Iberis* in question is the *I. amara*, *Linn.*, found plentifully in every garden, and cultivated for its brilliant milk-white flowers. It appears from the researches of the author, that this valuable plant was not only known to Pliny, and is mentioned by him in his Natural History, as a remedy for gout, but that it was accurately

described by Aetius, Paulus Ægineta, and Oribasius, and lauded by these venerable fathers of medicine as an excellent external and internal medicament in various diseases. It passed under the several names of Iberis, Cardamine, Lepidium vel Lepidum. Aetius has a long chapter headed "De Iberide sive Cardamine quæ et Lepidium vocatur." He remarks that Galen had written fully on its application in rheumatic affections of the hip-joint; and that Archigenes had prescribed it "in splenicis et coxendicibus;" and in an epistle to Aristo, which is quoted, had entered copiously into the subject of its botanical character, observing that its flowers were milk-white.

The Nasturtium, a plant akin to the Cardamine, is spoken of as a valuable addition to those medicines which relieve difficulty of breathing, and which dry up thick humours. Paulus Ægineta describes the Iberis et sylvestre Nasturtium as identical, and speaks of their value "non solum coxendicum sed etiam aliis diurnis morbis." Oribasius employs similar terms of eulogy in his description of the plant in question, so that no doubt can exist of its high estimation amongst the Greek practitioners. There is an incidental proof in Lindley's "Introduction to the Natural System," of the correctness of the belief that the order Cruciferæ contains many plants of value in the treatment of asthma and dropsy. It is there said that Prince Maximilian of Wied Neuwied, relates of the Brazilian Indians, that they used a kind of cress, resembling that of Europe, as a good remedy for asthma. The Iberis amara is a true cress.—*Prov. Med. and Surg. Journ.*, July 28th, 1847.

12. *Electric Moxa.* By Dr. GOLDING BIRD.—It was long ago observed by Humboldt, and afterwards by Grapengiessier, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. In applying such a simple arc to the treatment of paralysis, I was struck with the remarkable effects produced, and such a combination of its results induces me to propose the following ready mode of establishing a discharge from the surface of the body. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required, a piece of zinc foil, and to the other a piece of silver; connect them by a copper wire, and cover them with a common water dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with nitrate of silver. In forty-eight hours, a decided eschar will appear which (still keeping on the plates) will begin to separate at the edges in four or five days. The plates may then be removed, and the surface where the silver was applied will be found to be completely healed. A common poultice may be applied to the part, and a healthy, granulating sore, with well-defined edges, freely discharging pus, will be left. During the whole of this process, if the patient complains of pain at all, it will always be referred to the silver plate, where, in fact, the blister is rapidly healing, and not the slightest complaint will be made of the zinc plates, where the slough is as rapidly forming. A very interesting physiological phenomenon is observed in making an issue by these means. If the plates be applied to a limb, and on different places, contraction of the subjacent muscles will always be observed most severe when the patient is in the act of falling to sleep; and in a few cases, these sensations have been sufficiently annoying to induce the patient to untwist the wires fixed to the plate, when by interrupting the current these feelings ceased. But if the plates were applied to opposite sides of the body, as when on the chest to different sides of the mesial line, no contractions whatever occurred. This admits of explanation by a reference to the fact of the nerves not crossing the middle line of the body.—*London Medical Gazette*.

13. *Di-Arsenite of Quinine.*—Dr. KINGDON read to the South-Western Branch of the Provincial Medical Association, at their annual meeting on the 16th of July last, a notice of a new preparation of quinine which he had lately succeeded in preparing. It is the di-arsenite,—that is, it consists of one part of arsenious acid, and two of quinine; it is a powerful medicine, and one which he has found of great benefit, especially in chronic cutaneous affections, and has no doubt it would

be equally beneficial in ague, tic douloureux, and neuralgia. It possesses both the qualities of a mineral and vegetable tonic, and when the system has become habituated to either the one or the other, (which we frequently find the case from long-continued use,) by the administration of this medicine you still keep up the former action, while at the same time a new one is introduced into the system. He related a case which demonstrates this very satisfactorily. A young woman who had been affected with lepra six years, was admitted a patient at the Exeter Dispensary, under his care, and was ordered the liq. potassæ arsenitis, with decoct. dulcamaræ, three times a day. For a time the disease appeared to be improving, but it gradually got back to its former state, although the quantity of arsenical solution was increased to the full extent; he then ordered one-third of a grain of di-arsenite of quinine to be taken twice a day, and the following week the eruption was much improved; to make use of her own expression, "it was looking quite beautiful." It has been gradually increased to four times a day, and now she is nearly well.

Dr. Kingdon has tried it in several other cutaneous diseases, and with equal success. The preparation is made in the following manner:—He first dissolves 64 grains of arsenious acid, and 32 grains of pearl ashes, or subcarbonate of potash, in four ounces of distilled water, by boiling it for about half an hour, and then makes it up to four ounces with as much water as may be required, so that each drachm may contain two grains of arsenic. He adds five drachms of this solution to two scruples of disulphate of quinine, previously dissolved in boiling distilled water; immediately a white curdy precipitate is formed, which is the di-arsenite of quinine; he then pours it on a filter, well washes it, and leaves it on the filter to dry. When the proportions are accurately weighed, the water is neutral, and no arsenic can be detected. It is uncrystallizable and insoluble in water, but soluble in alcohol. He gives the one-third of a grain for a dose twice a day, and gradually increases it to three and four times in the course of the day, either made into pills with bread, or in the form of powders mixed with a little sugar or gum; of course nothing acid must be given at the same time, as that would decompose it.—(*Provincial Medical and Surgical Journal*, Aug. 25, 1847.)

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

14. *Efficacy of Compression of the Epigastrium for the cure of Hiccup.*—The employment of compression of the epigastrium to arrest constant hiccup, was suggested to M. ROSTAN, a long time since, by an old physician of Paris, whose wife was subject to attacks of hysteria, during which she suffered from incessant hiccup. This physician had remarked that his wife experienced remarkable relief from strong compression on the epigastrium with the hand. Since this period M. Rostan has employed this simple means in many cases of the same kind and constantly with good effect, whatever might be the cause of the hiccup. To render the pressure constant, M. R. has used, instead of the hand, a pad with a truss spring.—*La Lancette Française*, Feb. 20, 1847.

M. BOYER (*Révue Méd. Chirurgicale*, July, 1847), relates three cases of painful and obstinate hiccup instantly relieved by the above means. Borden recomended long ago, this plan, which had fallen into oblivion.

15. *Scurvy.*—The *Dublin Medical Press* (July 21st, 1847), contains an interesting paper on this disease, which is now prevailing very extensively in Great Britain, and particularly in Ireland, by Dr. O. B. Bellingham. Six cases of the disease are related, from an analysis, for which he presents the following as the more prominent symptoms of the present epidemic.

"*Appearance of the gums.*—The first appearance of the disease in the gums is slight swelling and increased redness of these parts, with a tendency to bleed, commencing usually upon the inside of the incisor teeth of the upper jaw, but soon extending to both; the swelling gradually engages the gums lining the molar teeth, particularly upon the inside, or it may commence here. When the disease

is advanced, the appearance of the mouth is very disgusting, the gums upon both sides of the teeth are red and swollen, presenting a broad irregular surface, and resembling the fungous granulations of certain ulcers, bleeding from the slightest cause, impeding articulation, and almost totally preventing mastication. When more advanced, the gums overhang the incisor teeth, and cover and almost conceal the molars; the breath at the same time is most offensive, resembling that of a person under the influence of mercury, but even more disagreeable. The local application which seemed to answer best in these cases, and which was the most grateful to the patient, was a gargle composed of tincture of myrrh, tincture of bark, and cinnamon water.

“*Spots of purpura simplex.*—Spots resembling those of the purpura simplex of Willan and Bateman were among the earliest symptoms; they were always first observed upon the lower extremities, usually below the knees, and were often limited to these parts; in no instance did I notice them upon the face. Many of these spots were small, resembling the maculæ of typhus or flea-bites; the majority, however, were larger; as they faded, they assumed a dull brown colour, just as is observed in purpura simplex. They were not elevated above the surface; in one or two instances they seemed to be mixed with papulæ, as they were attended with considerable itching.

“*Patches resembling purpura hemorrhagica.*—Large patches resembling those figured in Willan and Bateman’s work as characterizing purpura hemorrhagica, were observed only in the more advanced stage of the disease; in some instances these seemed as if formed by the union of many smaller patches; their shape was irregular; they were seen most frequently in the vicinity of the joints, particularly upon the inside and outside of the ankles; several were often present in the same patient, and their size seldom exceeded that of a half-crown. In one patient recently in hospital (who, however, showed no other symptom of scurvy), they had a very unusual site—viz., around each eye, and under the conjunctiva covering the sclerotic coat. It commenced in the cellular tissue about the right eye, and then extended to the globe, and continued to increase until no part of the sclerotic coat was visible, and the conjunctiva covering it had a deep blood red colour. The left eye then became similarly affected, and the patient presented a most extraordinary appearance. After a time the effused blood began gradually to be absorbed, and the patient left the hospital well.

“*Patches resembling ecchymoses.*—Patches of discoloration, resembling the effects of a contusion or bruise, were very common, and were sometimes the first symptom noticed. In the very early stage the discoloured appearance of the skin might have been mistaken for dirt; after a time, the part presented a most remarkable resemblance to the effects of a bruise or contusion, all the shades of colour which are familiar to us after such an injury being present. These patches of ecchymosis were in a great measure confined to the extremities, and were much more common upon the lower than the upper extremities; they were usually seen in the vicinity of the joints; a common situation was the ham, or the calf of the leg, or about the ankles; sometimes they were seen upon the thighs, the front of the wrists, or the arms; in one instance, immediately over the patella. They were almost always accompanied by the spots and patches of purpura already described.

“*Swelling and stiffness in the hams.*—A symptom which was sufficiently common was a stiffness of the hamstring tendons, accompanied by hard painful swelling in the popliteal space; this usually commenced in one limb and soon extended to the other. This condition was marked by considerable pain on motion, and by patches of ecchymosis upon the part, the space between the tendons of the ham appeared to be filled up, and the swelling extended below the joint to the calf of the leg; the part was hard to the touch, and the patient suffered so much pain upon motion as to incapacitate him from walking, and it was for this symptom alone that he sometimes sought relief. Swelling and stiffness in the hams were sometimes the first symptoms noticed, and sometimes almost the only ones present. The local application which appeared to afford most relief in it was ‘the anodyne liniment’ of the Pharmacopœia.

“*Edematous swelling of the extremities.*—When the disease was at all advanced, more or less swelling of the lower extremities was generally present; this was generally limited to the ankles, and resembled œdema, but the swelling was

harder and did not so readily pit upon pressure ; it was also accompanied by increased heat of surface and pain, and the skin was studded with spots and patches of purpura. Although the swelling was usually limited to the ankles, it sometimes engaged the entire limb from the groin downwards. In one case where the swelling was limited to one side, the limb presented many of the characters of phlegmasia dolens ; the patient was a female too, and had been confined a short time previous to its setting in.

"Debility.—Debility was an early and a constant symptom ; at first it consisted merely in a disinclination to exercise, and the patient was easily fatigued. As the disease advanced, the patient became so weak as to be incapable of moving about, or of making almost the slightest exertion, and he was usually further incapacitated, owing to the swelling and stiffness of the hams, or to the œdematous swelling of the lower extremities.

"Pains resembling rheumatism.—Pains referred to the bones or joints, resembling those of chronic rheumatism, were common ; in some instances, they were the first which attracted the patient's attention, and they were usually supposed by him to be rheumatic. They set in usually before any spots of purpura appeared ; but the gums, if examined, were always found to be engaged at the same time.

"Countenance.—The countenance was always characteristic, particularly when the disease was at all advanced ; it was then somewhat bloated and anæmic ; the cheeks and lips being blanched, with a yellowish tinge in the skin, at the same time being more or less expressive of anxiety. Sometimes the cheeks were much swollen, the patient was unable to articulate, and resembled a person suffering from severe toothache.

"Palpitation—Dyspnœa.—In few of the cases which I have met with were palpitation or dyspnœa much complained of by the patient. The action of the heart was usually somewhat more rapid than natural, and the pulse was small and feeble. No bruit de soufflet was ever audible on auscultation over the large arteries, nor was bruit de diable ever heard in the veins of the neck, though from the anæmic appearance of the person, it might, *à priori*, have been expected.

"Hemorrhages, &c.—No hemorrhage occurred in any patient under my care from any part of the alimentary canal ; the bleeding was almost confined to the gums ; in one patient, a female, epistaxis occurred twice ; in another the disease set in with menorrhagia, which yielded to the ordinary remedies. No patient presented ulcers upon the extremities or other parts, such as have been described by Lind and the older writers upon scurvy.

"Appetite—State of the bowels.—The appetite in almost every case was good, and remained so all through ; the tongue was usually clean but pale, and the bowels were generally regular.

"The disease which has just been described, and which, unfortunately, is now so prevalent, is neither a new one to the country, nor is it one peculiar to seamen, as has sometimes erroneously been supposed ; it is, in fact, precisely the same form of scurvy which in former times ravaged the northern countries of Europe, and whose visitations were as fatal and as much dreaded as any epidemic of modern times ; but which had been so completely eradicated in these countries as to be never met with on land ; and so rarely seen even at sea, that the majority of naval surgeons of the present day have had no opportunity of becoming acquainted with it.

"According to Lind, whose work upon the subject is the most complete, the countries in which scurvy formerly prevailed especially, were Holland, Germany, Hungary, Russia, Denmark, Sweden, Norway, and England. It would appear, from the history he has given, that the disease is one of very great antiquity, and that the prominent symptoms of the disease, as formerly observed, are identical with those of the present epidemic. Thus, Echthius, a physician of Cologne, whose work was published in the year 1541, enumerates, as the more certain symptoms, the following :—'A fœtid breath, a spongy swelling of the gums which are apt to bleed, with a loosening of the teeth, and an eruption of leaden-coloured, purple, or livid spots upon the legs.' Wierus, who wrote in 1567, adds some other symptoms,—viz., 'The weakness in the legs felt at the approach of the disease is attended with stiffness and pain ; small spots, resembling blood sprinkled upon the part, appear on the legs, thighs, and on the whole body, but the very

large livid and purple spots chiefly on the legs. In the progress of the disease the tendons of the legs become stiff and contracted.' 'If we compare (Lind observes) the symptoms given by those two writers with the accounts of the disease contained in books of voyages, particularly in Lord Anson's Voyage round the World, we shall perceive an entire agreement in the essential signs of the disease.'

"That the disease now so prevalent in this country is identical with that which formerly prevailed amongst seamen in long voyages, is also evident from the description of the scurvy given by Lind, himself a naval surgeon. The following are the symptoms of this disease as laid down by him in the third edition of his treatise, published in the year 1772, and they will be found to correspond closely with the symptoms already mentioned as characterizing the present epidemic:—

"The first indication of the approach of this disease is generally a change of colour in the face, from the natural and usual look, to a pale and bloated complexion; with a listlessness to action, or an aversion to any sort of exercise.

"Their former aversion to motion degenerates soon into an universal lassitude, with a stiffness and feebleness of their knees upon using exercise; with which they are apt to be much fatigued, and soon put out of breath.

"The gums soon after swell, and are apt to bleed upon the gentlest friction. Their breath is then offensive, and upon looking into their mouth, the gums have an unusual livid appearance, are soft and spongy, and become afterwards extremely putrid and fungous, one of the most distinguishing signs of the disease. They are subject not only to a bleeding from the gums, but from other parts of the body, especially at the nose.

"The skin, when examined, is found to be covered with several reddish, bluish, or, more frequently, black and livid spots, equal with the surface of the skin, resembling an effusion of blood under it, as it were from a bruise. These spots are of different sizes, from the bigness of a lentil to that of a hand breadth, and larger; but the last are more uncommon in the beginning of the distemper. They are to be seen chiefly on the legs and thighs, often on the arms, breast, and trunk of the body, less frequently on the head and face.

"Many have a swelling of their legs, which is first observed on their ankles towards the evening, and hardly to be perceived next morning; but, after continuing a short time in this manner, it gradually advances up the leg, and the whole member becomes œdematous; with this difference only in some, that it is never painful, also does not so easily yield to the finger, and retains the impression of it longer than a true œdema.

"In the second stage of the disease, the patients most commonly lose the use of their limbs; having a contraction of the tendons in the ham, with a swelling and pain in the joint of the knee. Indeed, a stiffness in these tendons, and a weakness of the knees, appear pretty early in this disease, generally terminating in a contracted and swelled joint. They are subject to frequent languors; and when long confined from exercise, are apt to faint upon the least motion of the body.

"The true scorbutic spots are flat and equal with the surface of the skin. I have sometimes, however, observed the legs, at the same time when greatly swelled, covered with dry scurfs or scales, and frequently there appear upon the skin small eruptions of the dry miliary kind.

"Some have their legs greatly swelled, and covered with one or more large livid spots or blotches, others have hard swellings, those in different places, extremely painful; and others I have seen without any swelling, have the calf of the leg as hard as a stone.'

"It would therefore appear from what precedes—

"1st. That a disease which had been so far extinguished as to be unknown to the practitioners of the present day, has reappeared in this country, and now prevails extensively.

"2d. That this disease did not make its appearance until after the people had been deprived of their accustomed diet for several months.

"3d. That this disease prevails only among that class of the population whose diet consisted formerly, in a great measure, of the potato, and who, as long as they had this vegetable in abundance, enjoyed a perfect immunity from it.

"The subjects of the preceding cases appear all to have had a sufficiency of bread, others had meat in addition, with sometimes wine or porter; none suffered

from an absolute deficiency of food; but all agreed in not having used fresh vegetables from the period of the failure of the potato crop of last year. It is clear, therefore, that the cause of the present epidemic may be traced to the absence of the potato from the dietary of the poor; and it is equally clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develop scurvy; while we know from long experience in this country, that a diet consisting solely of the potato is capable of affording sufficient nourishment, and of preserving the body in perfect health.

"Now, the potato is placed by theorists nearly at the bottom of the list in the scale of articles of nutrition; indeed it has been assumed to consist of little besides water and carbon. According to the Liebigian theory, carbon, which is a large constituent of fat, but contributes hardly anything to muscle or bone, abounds in the potato, while the constituents of bone and muscle are abundant in peas, beans, wheat, oats, barley, and rye; *ergo*, the latter are much superior to the former as articles of food for the labouring population; and philanthropic individuals have calculated that an Irishman who consumes daily ten pounds of potatoes would gain more nourishment and strength from a few ounces of peas or beans. Indeed, if all we read about nitrogenized and non-nitrogenized articles of food were correct, the potato would have fallen into disrepute long since; and it ought by itself to be incapable of supporting the strength of a labouring man; although for more than half a century it has constituted the sole food of the great majority of the peasantry of this country, and we believe a healthier or a hardier population was to be met in few countries; contrasting sadly with their present altered aspect after a diet for some months composed of more highly nitrogenized substances.

"The philosophers of the Liebig school would appear to regard the human body as little more than a machine or laboratory, certain substances introduced into which undergo certain chemical changes, the non-nitrogenized being subservient to respiration, the nitrogenized to the formation of blood, from which the organized tissues are formed; consequently it is only necessary to introduce the necessary amount of each, and the machine will be preserved in good working order. Now bread and meat contain 'the plastic elements of nutrition' and 'the elements of respiration' in the exact proportions necessary, yet we see that a disease has been generated by such a diet, which the use of what in theory is a far inferior diet protects the individual from.

"I had intended to have followed up this subject, but the length to which this paper has already reached precludes the possibility of my doing so at present. I shall merely add, therefore, that the reappearance of scurvy in this country appears evidently to be due to the absence of the potato from the dietary of the poor; and that there can be no doubt that the free use of this vegetable is the best prophylactic against the disease, and has been the cause of its subsidence for so many years. The present epidemic will, therefore, serve to show that a diet which contains nitrogenized substances in the greatest amount, and in the smallest bulk, is not the most eligible for man, but that other circumstances must be taken into account if we expect to preserve the health."

16. *On the Varieties of Headache*.—Dr. SAMUEL WRIGHT, of Birmingham, in a clinical lecture delivered at Queen's College, gives the following account of the different varieties of headache:—

To give you some general notion of them, as we are yet dealing only in generalities,—suppose a patient comes to you complaining of headache. This is a very generic sort of term, and may involve a great variety of specialities, some serious, and others simple. One patient, we will say, is in his teens, or not far out of them, yet he looks older by many years than he ought to do. His face is blanched and parchment-like, cheeks sunken, eyes hollow, lustreless, and watery, and they never look fairly at you; the man is timid, nervous, shuns society, and has no inclination for active pursuits; he is subject to giddiness and forgetfulness, and has almost constantly a dull, heavy pain at the back of his head, perhaps extending down the spine, with a sense of weight and dragging of his legs. Here you have a nervous system enfeebled and shaken from causes you will easily learn if you pointedly inquire after the personal habits of the sufferer. Another complains of oppressive pain chiefly over his eyes, scarcely ever leaving him,

but distressingly aggravated at different periods of the day. It is probable, that these periods are subsequent to meal times, and that then the headache is attended also with drowsiness. The man is dyspeptic. He will tell you that his bowels are confined, and that he is troubled with wind. Look at his tongue, and you will see that it is furred with, most likely, a brownish patch in the centre. Percuss the right hypochondrium, and you may find a greater extent of dulness, or more tenderness, than natural. The condition of the great viscus here is wrong. Liver, stomach, and bowels, are the sources of that frontal headache. Another patient has pain in the forehead, but it is acute and lancinating, and not persistent. Its periods of accession and departure are pretty regular. Ask the precise spot of the pain, and you will have indicated the exit of the supraorbital nerve of either side, probably the left. Here you have a case of *tic douloureux*, which may have no obvious exciting cause, or may result from exposure to cold, from dyspepsia, from pregnancy, from uterine disease or disorder, &c. Another complains of aching all over his head, considerably increased by heat or cold, as the case may be. On further inquiry, you learn that the pain is chiefly superficial, and that to rub the patient's hair in different directions, sharply, is to agonize him. Here you have rheumatism of the cranial integuments. Look cautiously after this case. You may suddenly have a pain of a different kind, and deeper-seated, ushered in by screaming and shouting, followed by restlessness and delirium, with a glaring injected eye—the meninges of the brain will be suffering from metastatic rheumatism in its most active form. It was gout, thus transferred, that destroyed the valuable life of Dr. Ingleby, your late Professor of Midwifery. Another has acute pain darting through his temples and ears, especially when he gets warm in bed; at the same time, he has what he well describes as “gnawing pains” in his shin-bones; his nose is tender, and the roof of it painful; he has, or has had, sore throat, and there are copper-coloured patches about his body. This headache has its foundation in syphilis: mind your treatment, or the more delicate bones of the head and face may be sacrificed. I show you a characteristic specimen in illustration. See how the nasal and temporal bones have suffered here!

A delicate female complains of heavy throbbing pain over the middle, or at the back of the head. She has had it several months, more or less, and is liable to periodical exacerbations. The uterus has likely something to do with this pain. It may be a case of simple amenorrhœa; it may denote the climacteric period of female life; it may depend upon pregnancy; or the uterus may be undergoing some morbid change. This organ, however, may not be at fault: habitual constipation, which females are often in the habit of neglecting, may be the cause of the suffering, or it may be occasionally by hemorrhoids.

Such, and so many, nay, many more, are the varieties of pains in the head, having different causes, and requiring different forms of treatment.—*Medical Times*, Dec. 19th, 1846.

17. *On the Semeiology of the Tongue*.—By SAMUEL WRIGHT, M. D., of Birmingham. Whilst some are disposed, in a prodigality of prejudice, to look upon the tongue as pathognomonic of nearly all the “ills that flesh is heir to,” others make comparatively light of it, and consider its testimony as little trustworthy. To be amongst the best judges on the subject, is to belong to neither of these parties. As a rule, the tongue is a very faithful indication of the condition of the alimentary organs; but its evidences are not unexceptionable. A furred tongue, for instance, is a common indication of dyspepsia, but it is not a constant one. We sometimes meet with irritable nervous subjects, whose tongues are habitually furred, yet without any signs or symptoms whatever of gastric derangement. Others, again, will have clean tongues, and of natural redness, whilst they are suffering from severe stomach disorder. Various circumstances exert a remarkable influence upon this organ. Some people, otherwise healthy, get a furred clammy tongue, if their stomachs are empty a little longer than usual. Others have their tongues always furred when their stomachs are full; the coating continues only during digestion, and passes off as this function ceases. Mental and moral emotions affect the condition of the tongue in a singular manner; perhaps it never becomes morbid without the nervous function, in its higher offices, being

somewhat implicated. This would explain why a furred tongue is so rarely met with in the inferior animals. It may happen, and I think not unlikely, that in dyspepsia, the disorder the brain suffers, sympathetically with the stomach, has as much share as this organ itself in giving the tongue its characteristic coating. Certain it is, as I have said, that the feelings of the mind will, in a very few minutes, render a clean tongue a foul one. This is a subject which I have been induced curiously to inquire into for some years past, and I have seldom met with an exception to what I have just observed. Among the profoundly studious, amongst those terrified by sudden apprehensions, or shocked by the sudden advent of ill news; among the hypochondriacal, hysterical, gloomy, and desponding, you will find many examples of the mind's influence, in this particular, upon the body. A patient of mine, living near this town, will well illustrate what I say. He is a man of remarkably good constitution, and moulded like a miniature Hercules. Moreover, he has no incumbrances; an excellent mercantile business, that takes up little of his time, is partial employment for him, leaving him many leisure hours in every day that he has some difficulty in disposing of. These he chiefly occupies in fancying himself the victim of all possible kinds of ailments. There is no disease in the nosology too much for his imagination. Of course, these things are all imaginary, and tiresome enough to listen to, when your judgment and sense of justice tell you that it is not a case for "physic and a physician." You will anticipate my saying that this gentleman is possessed of a most unfortunate nervous sensibility, which chiefly manifests itself in an ideal pathology, all reflected upon his own person. The peculiarity in point, however, which I chiefly wish to speak of, refers to his tongue. I had never seen him with this organ quite clean (although I have not once attended him for dyspepsia), yet the readiness with which it acquires a fur is very remarkable. Many times have I examined his tongue, and found it comparatively what it ought to be, before hearing a recital of his imaginary maladies; and after this, in some quarter or half an hour's detail, that same tongue has put on an aspect almost like that of flannel. I am at this time attending with Mr. Carter, a patient, one amongst the pitiable many who have seen better days. I shall take occasion hereafter to give you his case in due detail, but, for the present, I may observe that his tongue has the peculiarity characteristic of the one just spoken of. I should premise, however, that there is a fancied trouble in the one instance, and a matter-of-fact one in the other. Four days ago, in calling upon the gentleman I am now alluding to, one of the first things I did was to look at his tongue. I found it as usual, very pale, flabby and moist, but without any coating. After having made other necessary inquiries, I was informed by my patient that his heart, which has long been disturbed by mental emotion, the other night beat with unusual vehemence and irregularity. On my asking if he could account for it, he told me that he had just then received the distressing intelligence that an uncle, from whom he expected a competency, had not left him a shilling! This pitiable tale, told with much earnestness and visible feeling, occupied little more than twenty minutes; at the end of that time I again looked at his tongue, and found it coated with a thick white fur!

I mention these things, thus generally, to you, not only as items in pathology with which you ought to be made familiar, but also as suggestive of a discreet rule of practice, viz., to let the examination of a patient's tongue be *one of your first duties at his bedside*. My own experience, perhaps not inconsiderable on this point, enables me to say that in nine cases out of ten, and more especially among females, the tongue will be found, on first entering the room, in a very different state to what it is after half an hour's questioning and manipulation.—*Clinical Lectures in Medical Times*, Dec. 20th, 1846.

18. *On the Use of Opium in Inflammation.* By W. H. RANKING, M. D.—The legitimate sphere of action of *opium*, in the treatment of inflammatory diseases, is, we conceive, a point upon which our notions have arrived at tolerable precision. Under whatever modifications of individual circumstances attending such diseases the beneficial action of opium is observed, one well-marked morbid condition has, according to my observation, existed in every case, and that is an excitement of the nervous system, altogether disproportionate to the exaggeration of vascular action. This excitement is not shown in the existence of sponta-

neous pain alone, as we know that that symptom may be insignificant, or altogether absent, in instances of the most extensive and destructive inflammation; neither is it shown mainly by increased sensibility to local impressions. The excitement to which I allude, exhibits itself in disorders of the sensory and motor functions of the nervous system chiefly, and consists in watchfulness, or transient delirium, irregular respiration, and especially in restlessness and jactitation. In this condition of things, whatever be the violence of the local inflammation, or whatever organ be affected (excepting the brain in some instances), opium is imperatively called for. In other words, whenever, during the existence of inflammation, symptoms indicative of a loss of balance between the nervous and vascular systems exhibit themselves, sedative medicines are demanded in doses proportionate to the nervous preponderance.

This want of balance declares itself, I believe, chiefly under two conditions—1st, the existence of inflammation in a constitution naturally excitable, or in which the general powers have been reduced by the disease itself, by treatment, or by contingent circumstances relating to food, air, &c; and, 2d. in inflammation of organs or tissues, the implication of which, induces a state of things more or less approaching to that condition which, for want of a better term, we are in the habit of calling *shock*. In illustration of the first division, we may mention inflammation occurring in the hysterical constitution. In these cases, the phenomena which depend upon irritation of the nervous centres, take so decided a lead in the symptomatology of the case, that until they are controlled by opium, or some, under certain circumstances, more appropriate sedative, the inflammatory symptoms proper do not display themselves with their characteristic features. Again, inflammation may attack an ill-fed or previously debilitated individual; or the inflammation may have been too actively combated by blood letting, mercury, &c., without reference to the deficient resiliency of constitution, which, in children, more particularly, may lurk behind an appearance ostensibly robust. In these cases there may exist from the first, or there comes on assuredly at no distant period, a condition in which opium becomes necessary to save life, to prevent, in fact, in the latter case, the anomaly of the patient “dying cured.”

Under the second class of cases in which opium becomes a necessary part of the treatment, or is even mainly to be relied on, is inflammation of an organ or tissue largely supplied with ganglionic nerves, and in which, for this reason, the nervous system requires a large share of attention in the treatment of the case. Such is peritonitis or enteritis, either idiopathic or secondary; such are, also, one form of delirium tremens, diffuse cellular inflammation, and more particularly, phlebitis, the inner membrane of veins having the closest analogy to serous membrane in many respects, but especially in its large supply of organic nerves. In all these inflammations, the usual battery of antiphlogistics is worse than useless, unless combined with the liberal exhibition of opium.

The symptoms either existing *ab initio*, or, as is more commonly the case, coming on in the course of the disease, which indicate the necessity for opium, can only become familiar to the practitioner by clinical observation; but as far as written descriptions can be relied upon, it may be stated, that the broad expression of this condition consists in a failure in the power or regularity of the pulse, pallor of the countenance, moist skin, (but not in all cases,) tendency to incoherence, with restlessness, sleeplessness, and, in an aggravated form, jactitation. This is the broad outline, so to speak, of the state referred to, but it declares itself in minor degrees, with which experience alone can render us familiar, and the appreciation of which is in itself sufficient, in many cases, to make the difference between a successful and an unsuccessful practitioner; for to persevere in antiphlogistic treatment, or to withhold opium, when these indications offer themselves, is to destroy the patient.

In the exhibition of opium when these symptoms show themselves in inflammation, I know of no drawback,—no contraindication which should weigh for one moment against its paramount necessity. Be the skin sweating or dry, the tongue moist or dry, the bowels constipated or not, opium must be given. The constipated bowels, which are regarded by some as inducing the necessity for hesitation in the use of the medicine, I look upon as of the least importance in the generality of inflammations; in some, as in enteritis, a quiescent state of the bowels is

even needful; and were it not so, the probability is, that if the case has been properly managed at first, such a clearance will have been effected as will render any risk from accumulation comparatively small.—*Half Yearly Abstract, and Prov. Med. and Surg. Journ.*, March 10th, 1847.

19. *On Subacute Inflammation of the Kidney.*—JOHN SIMON, Esq., read to the Royal Med. and Chirurg. Society, June 8th last, a paper, the chief points of which were the following:—He first gave an exacter definition of the nature of glandular inflammation generally, showing how often no interstitial deposit of organizable material attends it, and, on the contrary, how much more constantly it evinces itself in modifying the physical properties of the secretion, by admixture of albuminous material, or otherwise. He stated that in the more complicated glands, many of the most obvious structural changes followed, and were caused by the lowest amount of inflammatory action; the secretion becoming first disordered, and then reacting often mechanically, on the structure of the organ. He illustrated this in the kidney, showing its subacute inflammation to commence as an epithelial disease, and to produce the final destruction of the organ, in a great degree, mechanically. After citing the causes of the disease, (among which he mentioned various fevers besides scarlatina,) he proceeded to describe the overabundant formation of modified epithelium, which is the first stage of the disease; stating that the tubes were bunged by it so as to be totally impervious, and were often so distended, that their limitary membrane would give way, and suffer its contents to be effused amid the surrounding blood-vessels. The microscopical examination of the urine would often show the specific cause of the disease—biliary matter, or oxalate of lime, or lithic acid, or fat, entangled or included by those well-known fibrinous casts of the tubules discovered by Dr. Franz Simon. These casts, and the more or less modified epithelium, were signs of renal irritation simply, the specific diagnosis being in each case furnished by additional matters which accompany their escape. He described the final shrinking and atrophy of the kidney as dependent on the gradual absorption of spoiled tissues—not to the contraction of effused lymph; and explained away the appearances which had led many observers to ascribe an unreal influence to the latter cause. He reviewed the subject of “Bright’s disease,” and stated his opinion, that in all instances of disease to which that name is applied, subacute inflammation plays an important part, and produces its characteristic symptoms. It had appeared to him, that this inflammation was always grafted on the fatty degeneration, so well described by Dr. Johnson. He recommended that the name of “Bright’s disease” should be discontinued; that the term “scrofulous degeneration” should be used for one form, and the common one of inflammation for the other. The former had not appeared to him to lead to contraction of the kidney, which he had found mainly in the other class of cases. In tracing the inflammatory changes, he gave an account of the formation of renal cysts, believing their development to be an almost essential part of the inflammatory process; his theory of them being, that when the tubes have been ruptured, these cysts are developed from the effused epithelial germs which (by the destruction of their limitary membrane) are brought into unnatural circumstances. They had appeared to him an extravagant overgrowth of common nucleated cells, down to the size of which he had repeatedly traced them. From this remarkable smallness in which they commence, it seemed impossible that they could arise from the tubes; nor had he ever seen any such connection. In a few remarks on treatment, he expressed a strong opinion against diuretics, and much reliance in the sweating-bath. He spoke of the disease as one of almost incredible frequency, and said, that in a vast majority of cases the disease had been overlooked during life, while its traces in the dead body were such as might easily elude observation.—*Lond. Med. Gaz.*, July, 1847.

20. *Albuminous Urine produced by the use of Cantharides.*—M. BOUILLAUD read to the French Academy of Sciences, June 8th, a note on the production of albuminous urine by the use of cantharides. Having had numerous cases under his care where albumen was detected in the urine, including true cases of Bright’s disease, he determined to make some new researches concerning the different conditions or circumstances under which albumen may occur in the renal secre-

tion. For a long time he had noticed it in those cases where there was undoubtedly serious disorganization of the kidneys, or Bright's disease; but besides confirming his previous knowledge in this matter, his recent researches had brought to light one source of albumen in the urine which had escaped others, and that source existed in the action of cantharides. In many individuals, in whom there was no renal disease, he had large blisters placed on the skin, in those places where they had been previously cupped. In a man who had moderate pleuritic effusion, but whose urine contained previously no albumen, after he had been cupped, a blister was placed over the cut part. The urine passed after this, was put by, and on the next morning it was treated with nitric acid, when it became turbid and white, and altogether assumed the aspect and consistence of weak emulsion. The action of the cantharides on the kidneys, in this case, was evinced by the frequent desire to make water, the pain and agitation attending it; all which, as in other cases observed, passed off in twenty-four or thirty-six hours afterwards. This was the first case in which the experiment was tried; it was repeated in many others, all confirming the results above obtained. The action of the blisters in the way spoken of, was greater when applied to the skin after cupping, than when this was entire—a fact to be anticipated *à priori*. This curious form of albuminuria disappears at the end of two or three days, and is followed by no dropsy, as is the case where there is organic disease of the kidney.

In England, this action of cantharides in producing albumen in the urine, as well as in causing the exudation of blood, has been previously noticed. The investigations of the French physician, however, are confirmatory.—*Lancet*, June 26.

21. *On the Relations of Rheumatism and Chorea, and their Treatment.*—An interesting paper on this subject has appeared from Dr. BEGGIE, in the *Monthly Journal of Medical Science*, for April last. This number of that Journal not having reached us, we take the following abstract of it from *Ranking's Retrospect*, vol. v.

[The intimate connection which exists between rheumatism and pericarditis, and between the latter disease and chorea, has been rendered familiar by the writings of Bright, Babington, Copland, and others; but it has not, perhaps, been sufficiently demonstrated, although the association might be predicted to exist, that the abnormal choreal movements and the inflammation of the serous membrane, were alike traceable to one and the same pathological condition, viz., that state of blood which characterizes the rheumatic diathesis. In the paper, of which we subjoin an abstract, this idea is strongly insisted upon. The author, after relating several interesting examples of the association of rheumatism and chorea in different members of the same family, criticizes the explanation most in vogue respecting this coincidence, such as metastasis, extension of irritation to the spinal cord by the phrenic nerve, &c., offers in their stead the following sensible observations:—]

“Keeping these facts in view, and calling to recollection the several cases which have been recorded elsewhere, I cannot help coming to the conclusion that the simple and true view of their relation is to be found in the morbid condition of the blood, which is admitted to exist in the rheumatic constitution; and the explanation will equally apply to chorea occurring in families or individuals inheriting the rheumatic diathesis, to chorea occurring in connection with rheumatism, but without the cardiac complication, and to chorea associated with pericarditis or endocarditis, or both; the inflammatory affections of the fibrous tissues, as well as the spasmodic affections of the muscles and tendons, originating in the same specific disorder of the circulating fluids . . . Those remarkable cerebral affections, the wild delirium and violent mania, the coma, the fatuity, which not unfrequently occur in the course of rheumatic fever, or follow in its train, and which have usually manifested themselves along with the cardiac complication, causing doubt and perplexity in the mind of the attendant as to the real organ affected, admit, I apprehend, of the same explanation—the altered nature of the blood circulating through the brain, and not, as has been supposed by Dr. Watson, the embarrassment of the circulation from obstruction of its central organ; for in some instances, violent delirium has preceded the earliest symptoms of heart affection, and death in other cases has ensued on rheumatic attacks, accompanied by evidence of cardiac disease, but where the state of the brain was the chief

cause of apprehension, and dissection has shown nothing more than a row of small, slender, bead-like warts on the mitral valve. Surely, in such cases, it would be well to look to the altered state of the blood, as the common cause of the rheumatic affections of the parts, the inflammation of the membranes of the heart, and the disorder of the nervous centres.

[The treatment of the two affections, acute rheumatism and chorea, are next pointed out in the following words:]

“Rheumatism, however, cannot be regarded as an active inflammation, and treated accordingly. It must be rather considered as a disease dependent upon a specific morbid condition of the blood exciting inflammatory action, particularly in the fibrous tissues, and new remedies ought to be applied, with the view of lessening the amount of circulating fluids and altering their constitution. For this purpose, moderate blood-letting and calomel and opium, appear to be the most appropriate treatment; and I have repeatedly observed, particularly in cases which did not call for immediate loss of blood, that after persevering in the use of mercury for some days, apparently without benefit, the abstraction of a small quantity of blood has been attended with immediate and permanent benefit. I have never seen the rheumatic inflammation of the joints translated to the heart in consequence of blood-letting, and cannot but fear that the prevalent notions regarding metastasis have led to serious errors in the treatment of the disease. If we bear in mind that a third of all those affected with acute rheumatism also suffer from inflammation of the heart, and that a large number also labour under inflammation of the pleura and lungs, and not a few under alarming disorder of the brain, we shall be desirous to employ all the means in our power to overcome as quickly as possible that condition of blood which, as long as it lasts, is productive of such serious consequences to vital organs. I have often been disappointed in colchicum, and doubt its efficacy in true fibrous rheumatism, though I have been more sensible of its effects in the synovial variety, that form which is known as rheumatic gout, and in which purging with full doses of calomel, aided by other purgatives, so as to produce copious bilious stools, is also found useful.”

[Respecting the treatment of chorea, the author observes:]

“I have only to speak of the efficacy of one agent, having never had occasion to test the powers of any other; and it deserves remark that this remedy so available in chorea, is scarcely less so in chronic rheumatism. Arsenic is a most valuable and powerful remedy in these as in other diseases, and it is much to be regretted that so many are deterred from employing it, in consequence of the sickness and other unpleasant symptoms which it is apt to produce. Dr. Babington has noticed arsenic as the most powerful of all the remedies for chorea, and Dr. Hughes (see Abstract, vol. iv., p. 28) regards it as slightly inferior to the other mineral tonics; but he only employed it in seven cases, in five of which it failed or disagreed. In the experience of thirty years, and in a large number of cases, I have never known it to fail. It has certainly disagreed in several instances, but I have not abandoned it on that account. Its use has been suspended for a few days, and resumed perhaps to be suspended again; but I have invariably found that the choreal movements have been more and more modified after each, till at last the disease has yielded entirely.”

22. *A few Hints on Constipation.* By Dr. ROBERT DICK.—In all cases of constipation or torpor of the bowels, attention to the cæcum is important. It is here that fecal accumulations are, on several accounts, apt to take place. The circumstance of the large bowel here forming a cul-de-sac, out of which, moreover, the fecal matter during fourteen or sixteen of the twenty-four hours, can only escape by a course counter to gravity, disposes not a little to the collection there of excrement. And, indeed, in most cases of constipation, in cases of chlorosis, &c., we shall generally both see and feel a fulness at this part, sometimes of remarkable and even alarming extent and hardness. There is generally also considerable tenderness of the part; so that handling or pressure of it causes to the patient, not acute pain perhaps, but an unbearable uneasiness, which prevents you from making the examination freely. And I have no doubt that, in not a few cases, a state of chronic irritation of (sub-) inflammation and even of ulceration of the mucous membrane of the cæcum, is induced, from the prolonged contact of hardened feces, which, moreover, has be-

come preternaturally fœtid, and undergone certain irritating chemical decompositions. In such circumstances, either round or irregular masses of a fatty-looking substance may often be detected in the evacuations. This consists of inspissated mucus, secreted by a surface highly irritated or sub-inflamed. A slight prolongation or increase of such irritation will convert this inspissated mucous discharge into a purulent one.

The fact of accumulation in the cœcum being ascertained, a bolus of pills, containing ten or fifteen grains of blue pill, aloes, and hyoscyamus, in equal parts, are to be given at bed-time, on one, two, or three alternate nights. Next morning, a dose of castor oil is to be taken, and means afterwards are to be used, both dietetic and purgative, to keep the bowels patent, and prevent a recurrence of the impaction of the cœcum.

Injections are of much use in this complaint, though only, indeed, of temporary utility. They should be of an oleaginous quality, and be large in quantity, and either during, or subsequently to, their being administered to him, the patient should lie on his right side, so as to promote the passage of the injection to the ascending colon and the cœcum. The right groin should be gently, but effectually, kneaded, as it were, by the hand of the patient himself, or of an assistant. In this way, lumpy masses of feces, which had obviously accumulated in the cœcum, may often be brought away, to the great relief of the patient. A tablespoonful or two of oil of turpentine added to the injection, adds much to its efficacy. This oil seems to exert a most salutary influence on the colon.

A German lately came to London, who professed to cure cases of constipation without the aid of medicine, and simply by friction. He rubbed and kneaded the abdomen, first over the small intestines; then, beginning from the right groin, he continued the process all along the course of the colon to the left groin. By this means, he, probably, actually forced along the fluid feces, and, at the same time, stimulated the muscular coat of the intestines to contract. He devoted several hours, on successive days, to this manipulation, and, as I was informed, often succeeded on the second, third, or fourth day, even in some obstinate cases.—*Lancet*, Jan. 9th, 1847.

23. *Case of Jaundice—Fungous Growth round the Orifice of the Ductus Choledochus—Dilatation of the Hepatic Ducts in the Liver.*—At a meeting of the Pathological Society of Dublin, Dr. STOKES presented a series of recent specimens, portions of the liver, stomach, and duodenum of a patient, whose case he considered to be unique, as regarded its duration and the extraordinary combination of symptoms which it exhibited. He knew of none similar on record; he had met with none similar in practice. The most obvious disease in the case was jaundice—a complaint to the history of which this case supplied some important additions. The subject of the case was a gentleman, who described himself to have been in uninterrupted good health up to the age of 68. He was of spare habit, temperate, and active, but latterly had taken less than his usual exercise. All through his illness he was seen by Dr. Stokes. He had gone to bed in a state of apparently perfect health. During the night he felt an extreme itching of the skin. This subsided during the day, but returned during the following night. Dr. Stokes was then called in. He found the skin cool, the pulse quiet, the appetite good, and there was no complaint, except the violent itching of the skin at night; there was a red-coloured sediment deposited from the urine. He continued for a week without any alteration in his symptoms; the stools were natural; there was no appearance of jaundice. At a consultation on the case, it was determined to be irregular gout—a conclusion principally founded on the absence of local symptoms. After a week had elapsed from the first indication of illness (January), he suddenly became deeply jaundiced. There was no fever, and the appetite remained unimpaired during three weeks subsequent; then an intermittent fever set in, which continued, with some intervals of remission, up to the time of his death. This fever, Dr. Stokes considered, evidently depended on the presence of free bile in the general circulation. Its accession was very sudden; there were no premonitory symptoms; it commenced with lassitude, rigors so severe as to shake the apartment, and which lasted for an hour, and were succeeded by heat; but there was no sweating stage. During the fever the jaundice increased. The fe-

brile attacks occurred sometimes on every second, sometimes on every fourth day; but whether the type was tertian or quartan was not determined. The feces were white. Under the use of mercury and bark he got better, and in the month of April appeared well. The stools were coloured with bile; the urine was clear; the febrile symptoms had ceased. He was then sent to the country for the summer; but about the end of May he went to London, and, while there, had another attack, the immediate cause of which was some excess of diet. These attacks were from that time very frequently repeated; they were excited by various circumstances, such as constipation, errors in diet, slight exposure to cold; but latterly they came on without any apparent exciting cause. After his return from London, a train of new symptoms appeared; he was exhausted by the journey, and on his arrival seemed more dead than alive; his discourse was quite unintelligible; he was, in fact, talking gibberish, yet he was not delirious; he had rigors, but these ceased after he had been some time in bed, and he became able to speak. Every second day there was a violent paroxysm; the stools were hard and white; constipation now ensued; severe uneasiness was felt about the fundament; purgatives gave no relief; there was constant tenesmus, and straining to pass matter from the bowels after the exhibition of purgative medicines; but only thin matter, in small quantities, was discharged; the jaundice and fever increased in intensity. On the second day of this constipated state, Sir P. Crampton inserted an instrument into the rectum, with which he removed some hardened feces; this was followed by seven or eight copious stools, and the patient from that time began to recover. The amendment continued for several months; he became fat and strong, had good sleep and spirits, until he became distressed at the death of some friends, when the symptoms of his illness reappeared. On every day, or sometimes every second day, he had a febrile attack, but without perspiration; this continued during a year. Before each of the attacks in this period, he had a sense of great oppression in the head; during the intermissions the tongue was clean, the abdomen in a normal state, and the jaundice had almost entirely subsided. Of late there appeared an irritable condition of the urinary organs; there was sometimes a copious discharge of urine, then suppression, and at the same time anxious desire to pass water; great irritation of the bladder. The treatment adopted was various; relief was latterly obtained by the use of blue pill, together with the sulphate of quinine. During the last eight days of his life, the fever continued without intermission, and he died comatose. There had been no physical signs of any organic disease; Dr. Stokes therefore expected that some very local disease would be found to have given rise to all this illness. On examination the liver was not at all enlarged, but there was a diseased state of the mucous membrane of the duodenum, about the orifice of the duct; the ductus communis was enlarged in calibre, and so were the biliary ducts all through the liver; there were several elevations or prominences on the surface of the liver, formed by true aneurisms or dilatations of the hepatic ducts. This circumstance, Dr. Stokes remarked, he had before met with; and he also referred to a paper by Mr. Lloyd, in the *Medico-Chirurgical Transactions*, in which a similar lesion is described. The orifice of the duct in the duodenum was surrounded by an irregular fungus, resembling an old cicatrix; the gall-bladder was distended with bile, its coats were thinner than natural; the ductus communis was greatly dilated, but the obstruction to the flow of the bile had never been complete; the orifice, though obstructed, remained pervious; none of the other viscera presented anything abnormal.—*Dublin Quarterly Journal of Med. Science.*

24. *Obliteration of the Spermatic Ducts.*—M. GOSSELIN read a memoir before the Academy of Medicine on spermatic obliterations, in which he proceeded to show that the ducts destined for the passage of the semen were liable to become obliterated, just as the ducts for the transmission of the bile, urine, and saliva. The obliterations which he has met with have been found in, 1, the vas deferens; 2, the tail, or globus minor of the epididymis; 3, the head, or globus major of the epididymis; and 4, the seminiferous vessels of the testicle. M. Gosselin only once met with obliteration of the vas deferens, when it extended from the commencement of the canal to its pelvic portion; there was not obliteration merely, but a disappearance of the organ in this part of its course. The canal of the epi-

didymis presented a varicose enlargement, and contained a great many spermatic animalcules, whilst the vesicula seminalis was devoid of them. Obliterations on a level with the tail of the epididymis were demonstrated by the impossibility of passing fine injection along the tubes; by dissections which have displayed, at the part, a fibro-cellular, impermeable substance; by the varicose dilatation of the epididymis; and by the existence of spermatozoa in this part, and not beyond.

The memoir terminated with the following conclusions:—1, the vas deferens may be obliterated, and cease to carry the semen on towards the vesiculæ seminales; 2, the canal of the epididymis may become obliterated about the tail of the organ; 3, in these two cases the duct, whose convolutions form the epididymis, may dilate, and become varicose, or may preserve its normal character; 4, the testicle, in these cases, does not constantly become atrophied; it continues to secrete, absorption relieving the consequent engorgement of the duct; 5, there may exist partial or temporary obliteration about the tail of the epididymis; 6, obliterations may occur about the head of the epididymis, but these do not present an obstacle to the course of the seminal secretion; 7, there may exist total or partial obliterations in the seminiferous vessels of the testicle.

We may suppose the obliterations in the course of the efferent ducts of the testes, which M. Gosselin has examined, to be, perhaps, not an infrequent cause of impotence. We now want further investigations to demonstrate to us the cause of such obliterations,—whether chronic inflammation from over-excitement or from injury may be a cause; also how such obliterations may be detected during life, whether we can derive any assistance in diagnosis from a varicose condition of the epididymis; and how far curable some of the cases of obliteration may be, for some we may determine to be incurable.—*Lancet*, July 31, 1847.

25. *Sulphuric Ether in the Treatment of Intermittent Fevers.*—Dr. CHALLETON states that he has uniformly succeeded in curing intermittent fever, which has appeared in the neighbourhood of Gannat, by administering half a teaspoonful of sulphuric ether at a dose, either on the occurrence of the shivering fit, or at intervals of four hours on the day before the attack. Several physicians in the neighbourhood have adopted this mode of treatment with satisfactory results.—*Lond. Med. Gaz.*, Aug. 1847.

26. *Galvanism in Aphonia.*—The following is the description of one of the earliest modes of applying galvanic action to the treatment of disease, and on account of the long continuance of its effects, is thought by Mr. Donovan to hold out considerable advantages:—In the case of a young lady, affected four years with hoarseness, and more or less complete aphonia, blisters, mercurials, &c., had been used without any relief. Her physician, Dr. Grapengiesser, then thought of increasing the action of blisters by galvanism, and accordingly, having vesicated each side of the larynx to the size of a shilling, he covered the excoriated spots on one side with a zinc plate, to which a wire of the same metal was attached, and on the other with a piece of silver. As soon as he brought the two plates in contact, a burning sensation at those spots arose, and the larynx heaved up and down convulsively, with loud sobbing. On alternately breaking and re-joining the contact, these motions became so violent as to be almost insupportable. After this process had been continued for a quarter of an hour, a watery humour began to run from the excoriated surfaces. The apparatus was removed, and towards evening she began to speak more audibly and the improvement continued next day, but was lost again on the fourth or fifth day. The process was then repeated, with the same results, and the apparatus was left on all night, with the effect of permanently restoring the voice.—*Dublin Quarterly Journal of Medical Science*, Feb. 1847.

27. *Effects of Electricity on the Human Organism.*—M. PALLAS, chief physician of the French armies in Algeria, communicated to the Academy of Sciences, the results of his most recent researches as to the influence of atmospheric and terrestrial electricity on the organism, and as to the power of insulation in modifying its injurious effects. He concludes his researches by the following summary of results:—

1. The greater number of diseases, and more particularly those which involve the nervous system, (belonging to the class of neuroses,) are caused by the excessive influence of general electricity, of which stormy clouds and marshy localities are the most abundant sources.

2. Marshes, by their geographical constitution, and their effects on the animal economy, offer the greatest analogy to the galvanic pile. Indeed, their noxious action is by so much the more formidable, as the water which exists in them holds in solution organic or saline matters; and this explains why salt-water marshes, and those near the sea-coast, are more especially injurious to the health. The drying up of marshes, or their submersion, presents us with similar conditions, as when a galvanic pile is deprived of its liquid, or totally immersed; in either way its action being rendered insignificant, or being quite annulled.

3. The works of physicians and physiologists have demonstrated that electricity produced by machines has a special action on the nervous system. Experience and rigorous observation of facts prove, that the maladies which are developed in the proximity of marshes are always, primarily, of a nervous type; and that when they become inflammatory, it is by the reaction of the nervous system on the heart and entire vascular system, whence arise, consecutively, local or general inflammations.

4. Nervous maladies and intermittent fevers being occasioned, not by the action of a miasma, which has never been detected either in the air or in the water of marshes, but by the excessive (exaggerated) influence of electricity, some means which have in view the modification of this morbid influence, should naturally and rationally be preferred.

5. Electrical insulation happily fulfils this indication. The insulation may readily be effected by fitting on to the ordinary forms of beds, feet made of glass or of resin. A great number of observations have demonstrated to M. Pallas, that all the sick who have been thus insulated, have been cured or relieved of their severe diseases, many of which had previously resisted all known means of cure.

The plan of treatment here advised, has the strong recommendation of cheapness and the avoidance of trouble; but we fear that neither the treatment, nor the hypothesis on which it is built, will bear the test of experiment and experience. The prevalent and active source of so many diseases which infest mankind, and which M. Pallas thinks to be found in electricity, we should rather admit to be hidden at present; but judging from what we do know of the laws to which even this subtle agent, the source of fevers, &c., must conform, there is a probability against its being electricity, and in favour of its being a miasm issuing from the earth under certain conditions, and we may, perhaps, proceed so far as to predicate a peculiar electrical state, as one of those conditions. Neither is it any argument against the existence of a miasm, that it has never hitherto been made cognizant to our senses, save by its effects, as brought forward by M. Pallas.—*Lancet*, June 26.

28. *Benzoate of Ammonia in Gout*.—Dr. SEYMOUR (*Thoughts on Several Severe Diseases, &c.*) states that he has frequently used this medicine in cases in which the small joints were red and swollen, or where fluid was deposited in the joint of the great toe, and also in cases where the lithate of soda existed in the joints of the fingers, and that it was decidedly useful. He thinks that early depositions have been arrested, and large depositions diminished, under the use of this medicine. He regards it as a good diuretic, and as especially adapted to those cases of dropsy in which an irritable stomach renders the employment of ordinary diuretics impracticable. He has seen also the albumen in renal dropsy diminish under the use of the benzoate of ammonia.

29. *Binoxide of Mercury in Skin Diseases*.—M. IBREISLE has reported the results of his experience in the use of the binoxide of mercury as a local application, in diseases of the skin, especially those of a strumous or syphilitic origin. Indolent ulcers of the extremities have frequently yielded to this application, as have also phagedenic ulcerations. The author regards this preparation as an excellent remedy for the removal of the indurations which accompany syphilitic ulcers; he has likewise used it with success in pustular syphilides.

The formula is that of an ointment, consisting of one part of the oxide, to four

or five of lead. Some caution appears to be necessary in its employment.—*Gaz. Méd. de Paris*, March 8th, 1847.

30. *Treacle as a Local Remedy for Rheumatism.* Mr. VINES stated to the Reading Pathological Society, a case where a patient was suffering from rheumatic pains of the legs, and had been treated by eminent men in various ways without relief, when an old nurse recommended the legs to be wrapped in flannel soaked in treacle for some days, which procured him complete relief. He therefore thought there was some sedative influence in the treacle.—*Prov. Med. and Surg. Journal*, Aug. 25, 1847.

31. *Influence of Quinine on the Volume of the Spleen in Ague.*—M. VALLEIX, physician of the Hôtel Dieu, has directed his attention to the action of the sulphate of quinine on the volume of the spleen in intermittent fever. He has done so to test the accuracy of a statement made by M. Piorry, that the disappearance of the paroxysm coincides with the diminution of the volume of the spleen; that this organ sensibly diminishes in thirty or forty seconds after the administration of a full dose of quinine, in solution, and acidulated; that the diminution goes on very rapidly if the quinine be continued in a sufficiently large dose. M. Gouraud having examined into this matter, however, states that he has not found the spleen thus diminish, but that, in consequence of an accumulation of gas in the stomach, from the ingestion of the quinine, the left hypochondrium is rendered sonorous, and the dulness over the spleen becomes masked. These opposite statements M. Valleix has kept in view in making some fresh observations. He narrates a case, and its course; quite a simple case of ague, occurring in a young and robust man, who had never suffered before. It was a recent case, and there were no evidences of organic disease in any organ; the spleen had undergone very considerable enlargement, being readily perceived through the abdominal wall, and therefore its size could be estimated with the greatest precision. The sulphate of quinine, although given in a very strong dose of thirty grains, and acidulated, so as to render the salt a bisulphate, did not act, as represented by M. Piorry, on the volume of the spleen, neither at the end of forty seconds, nor of twenty minutes, nor even of twenty-four hours. The medicine also had no such power when given in still greater quantity, but divided, during the day, into several doses, and continued on succeeding days. But after the application of cupping-glasses and leeches over the splenic region, the volume of the spleen, on the contrary, diminished rapidly, although the dose of quinine was abated. Lastly, notwithstanding the persistence of the splenic engorgement, the fever was cut short, and there was no trace of a recurrent paroxysm.

Another equally uncomplicated case occurred to M. Valleix, and the same method being tried, was attended by the same results. It must, however, be mentioned, that three days after the first dose of quinine, a slight diminution of the spleen was noticeable; but this little decrease, which perhaps, too, was partly owing to a bottle of eau de Vichy which the patient took, was lost sight of when compared with the rapid diminution which followed two days afterwards, when cupping-glasses were applied over the spleen, and which continued to go on. In this case, also, as in the preceding, although the enlarged spleen remained, the fever was removed.

The third case differed from the two preceding, in that it was of older date; but there was no essential difference in the effects of the treatment. The spleen remained unaffected in size during the first day, when quinine alone was given; but quickly decreased after local bleeding, although the dose of quinine was lessened. The fever was removed before the engorgement of the spleen had subsided.

Thus these observations contradict the assertions of M. Piorry both as to the coincidence of the disappearance of the fever and the decrease of the spleen, and as to the immediate and prolonged influence of quinine in diminishing the splenic congestion. M. Valleix also confirms the observation of M. Gouraud as to the formation of gas in the stomach upon the quinine being swallowed, augmenting the resonance over the left hypochondrium, and so hiding the dulness over the solid spleen beneath to a slight extent; not so much so, however, but that palpitation and percussion will readily detect the engorged organ.—*Lancet*, September 4th, 1847.

32. *Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa.*—Dr. SIMPSON's own observations fully confirm the recorded opinions of Dr. Bennet and others regarding the general dependence of leucorrhœa upon inflammatory ulceration and induration of the cervix uteri. He has found inflammatory enlargement and induration of the tissues of the cervix very frequent in practice, and existing, in fact, in most cases of very chronic and aggravated leucorrhœa. In practice he has seen it mistaken for the induration and ulceration of carcinoma, &c. Formerly, in the treatment of these common cases, Dr. S. employed the frequent local application of leeches, and counter-irritation to the sacrum, &c., with the use of pessaries of mercurial and iodine ointment, keeping the indurated tissues imbedded in these applications, &c. The cure in this way is tedious, and months are often required before the indurated parts became reduced. Various local escharotics, partly to destroy the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action, have been in modern times employed for the same purpose, and with much more certain and expeditious effect. Dr. S. has in this way employed, in a number of cases, nitrate of silver often applied, Vienna paste (*potassa cum calce*), and nitric acid. He states the particulars of a case which he had treated successfully four years ago with nitric acid, and he had lately seen the patient in perfect health; it was at the time supposed that she had cancer uteri. Latterly, Dr. S. has abandoned these and other escharotics, and now always uses the common *potassa fusa*. He has found it far more manageable, speedy, and certain than any other method. He uses it of course through the speculum, applying a stick of it freely with a proper caustic holder to the ulcerated and indurated tissues. It requires to be rubbed or held *strongly* for a time against the part which is to be destroyed. In general a piece three-quarters of an inch, or an inch long, is melted down. The decomposition produced by it often causes a hissing sound. If the induration is extensive, and the whole cannot be removed at once, increased action and absorption are set up in what remains, and the parts adjacent become softened and diminished in size. Absorption in this way is truly one of the results or consequences of inflammation, though still an undescribed *termination*. In some aggravated cases, two or more applications of the caustic are required at intervals of eight or ten days. Dr. S. has never seen pelvic cellulitis, or any other bad result follow. The appearance after the operation is as if a portion had been clean cut out with the knife. A large quantity of vinegar and water is immediately thrown up through the speculum to neutralize the potassa, and prevent it from injuring the sound parts. A copious purulent discharge usually follows for several days, requiring the use of astringent washes, or zinc ointment pessaries. When the whole of the induration is once removed, the remaining ulcer heals rapidly and permanently. An ulcer over an indurated part may be cicatrized, but it is almost certain to break out again and again till the induration itself is reduced.—*Month. Journ. of Med. Sci., July 1847.*

33. *Death of a New-Born Child from Hypertrophy of the Thyroid Gland.*—A robust and full-grown infant, born in a state of asphyxia, continued to respire in an abnormal manner even after the removal of the asphyxia. A dose of squill juice occasioned vomiting, after which the child fell asleep. On awakening, the suffocative attack was renewed, the voice being hoarse and crowing. Deglutition was also impeded, the food being swallowed with difficulty and with perceptible noise. There was manifestly some permanent obstacle of a kind at once to narrow the wind-pipe and the gullet, in confirmation of which a perceptible swelling occupied the neck. On the fourth night a suffocative attack put an end to life. The dissection gave the following light on the case:—The thyroid gland, engorged with blood and composed of a very compact parenchymatous substance, was so much enlarged as to occupy the whole anterior region of the neck—its two horns extended above the lateral parts of the hyoid bone; its lateral borders reached beyond the anterior margins of the sterno-mastoid muscles; the upper concave edge covered the larynx; its lower concave edge the upper part of the sternal manubrium. Behind the thyroid gland there were seen two thick muscles surrounding the windpipe and throat throughout. The most considerable stricture of the windpipe was at its lower part, while the rima glottidis were perfectly normal.

At the bifurcation of the trachea a great quantity of dirty milk-like mucus was met with. As to the remaining organs, the thymus was less developed, both the lungs of normal appearance, with the exception of the top, which exhibited several more compact, somewhat liver-like, dark-red spots. The heart was deep-red, and as well as the pericardium, was engorged with venous blood. In the pericardium there was about a spoonful of yellow serum. The valve of the foramen ovale was not yet quite closed. The main vascular trunks were of healthy structure. We learn from these post-mortem appearances that in this case the pulmonary circulation had not yet been fully developed, in consequence of which the brain became gorged with blood, and at last apoplectic.

There are two diseases which might have been confounded with that just described, asthma stridulum and croup. These differ, however, in many points; the former by its more tardy appearance, the non-permanency of the dyspnoea, the tetanic spasm, and complete interruption of the respiratory process at the close of life; the latter by the normal deglutition, and in common with the former, by its more tardy appearance.—*Ibid.*, from Caspar's *Wöchenschrift*.

34. *Case of Ischuria Neonatorum.* By ALOIS BEDNAR.—A child, who died on the 13th day after birth, during the last five days while he was under the care of the reporter, passed no urine. It does not appear whether or not he had passed any on the previous days. The dissection showed the following very interesting state of the parts. The caput gallinaginis, instead of passing, as in the normal structure, into a prominence, ending in two branches which again divide into a great number of little folds, was here branched at its anterior extremity, into two mucous valves, running along the walls of the urethra, from behind downwards and forwards, towards the middle space where they united together. These two crescentic valves, with their concavity looking towards the bladder, included between their combined terminations, a very narrow fissure running necessarily from behind forwards. From the structure it is evident that whenever the bladder contracted on the urine, the cavity of the valves became filled with it, and the fissure between them being completed by their distension, not a drop could issue beyond. It was easy to pass a thick probe from the anterior part of the urethra into the bladder, but when the probe was passed from the bladder, it was impossible to reach the urethra without the assistance of the eye, the probe being otherwise continually thrown back by the valves. As to the surrounding parts, the rest of the urethra and genitals were quite healthy; the urinary bladder was hypertrophied, its usual thickness being trebled, the thickening being principally in the muscular coat. On the inner surface of the bladder there was seen an incipient tubercular tissue, moreover some little pervious dilatations, and a greater sac with a sphincter-like opening at the termination of the left ureter. The remaining portion of the ureter was dilated and thickened, the renal substance was atrophied. As it cannot be assumed that the high degree of hypertrophy and dilatation of the urinary organs had been developed during the short continuance of life, it is very probable that as soon as the secretion of urine commences, there is a necessity for its evacuation by the urethra. And hence, also, it is to be inferred that an empty urinary bladder is not to be regarded in forensic medicine as one of the evidences of an infant having lived after birth.—*Ibid.*, from *Zeitschr. d. Gesellph. d. Ärzte Zu Wien*, Feb. 1847.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. *Influence of the Laws of Gravity on Circulation and Local Inflammation.*—Prof. GERDY read to the French Acad. of Medicine, May 25th, an interesting paper of a practical nature on this subject. The author remarked that the influence of the laws of gravity on the circulation, was often evident in the production or increase of cephalalgia, of œdema of the extremities; that it was sometimes an obstacle to the cure of hydrocele after operation, as also to absorption of hydarthrosis of the knee or ankle; that it occasioned the displacement and extension

of ecchymosis, and favoured the development of uterine hemorrhage, of hemorrhoids, and of varicose veins; that diffused or circumscribed phlegmonous inflammation, could frequently be ascribed to no other cause, and consequently, that those parts of the body which their dependent situation most exposes to these various affections should, on the imminence of any one of them, be placed in an elevated, or, at the least, in a horizontal attitude. This was a precept of general practice, applicable to a vast number of different disorders, and which should, therefore, never be lost sight of.

M. Nacquart expressed a regret that Professor Gerdy had not established a comparison between the influence of position and that of compression on inflamed parts. The method of compression with strips of adhesive plaster, had been by error attributed to the British surgical school, but had, in reality, been introduced into practice by French surgeons more than thirty years ago. M. Nacquart had seen it applied in Paris, and he thought it might with advantage be substituted to elevation of the limbs, to which M. Gerdy had granted so much influence in the treatment of phlegmonous affections.

M. Malgaigne agreed with M. Gerdy in praising the results obtained in inflammations, by elevation of the part. The method was in its nature so simple, that it might be supposed to have been suggested in the most elementary works on surgery; such was not, however, the case. The manner in which a violent local inflammation might be reduced in a few hours, under the influence of a mere change of position, was in itself something marvellous. It was a fact of every day observation, that when a whitlow caused excessive pain, the sufferings of the patient might, in a few minutes, be relieved by elevation of the hand. M. Malgaigne then related several cases illustrative of the same fact, and made some further remarks on another point connected with the subject—viz., the possibility of arresting hemorrhage in one organ by elevation of another part—for instance, epistaxis was often stopped by raising the arms. Here, again, most probably the influence of the laws of gravity on the circulation of blood, was the cause of the beneficial effect of this practice; and so convinced was M. Malgaigne of their efficacy, that when, after the operation for hydrocele, the inflammation of the tunica vaginalis did not occur within the usual time, he prescribed merely that the scrotum be abandoned for a few hours to its weight—a plan which was invariably followed by the desired congestion of the parts.

M. Gerdy could not think that compression, with strips of adhesive plaster, might be substituted for position. In fact, this compression often did more harm than good; whereas elevation of the limb constituted an incessant withdrawal of blood from the part, without loss of the circulating fluid. M. Gerdy concluded his remarks by stating that the advantages of his method were particularly distinct in cases of atonic ulcer of the leg.—*Medical Times*, June 5, 1847.

[The late Prof. Physick, of the University of Pennsylvania, was accustomed, in his lectures, to lay great stress upon the importance of position in the treatment of local inflammations, and many years ago inculcated the very views now put forth as new by Prof. Gerdy and M. Malgaigne.]

36. *Wound of the Brain—Recovery.*—The *Journal de Médecine, de Bordeaux*, contains the following interesting case of a wound of the anterior lobe of the brain, in a child, not followed by any mischief. A child, aged twelve, made a false step, holding at the time an open knife in his hand. In the fall, the knife being directed towards the head, rapidly penetrated through the left orbit. The lad did not raise any cry, but ran into the infirmary of the establishment in which he lived, the knife still sticking in the head. When M. GINTRAC was called to him, he found him laid upon his bed without consciousness, the skin cold, and the face pale, the pulse imperceptible. The knife had passed between the globe of the eye and the upper eyelid, about midway between the orbital angles, and had perforated the orbital portion of the frontal bone, in which it was tightly fixed. Its direction was oblique—viz., from below upwards, and from before backwards, forming with the facial line an angle of about 45°. The back of the blade was next the globe of the eye, and pressed it downwards and backwards, while the cutting edge raised the upper lid. M. Gintrac sought at once to remove the knife; his first attempts were fruitless, but by persevering for five minutes, and with the

help of another, it was extracted. The entire length of the blade was three inches and one-fifth, its breadth two-fifths of an inch; it had penetrated, measuring from the margin of the eyelids, two inches. Whilst the proceeding was going on, the lad remained quite insensible. Compresses, with cold water, were ordered to the eye and forehead, and sinapisms to the feet. Between four and five hours afterwards, the boy had recovered his senses, spoke freely, suffered no headache, and complained only of a smarting in the interior of the orbit; the pulse began to rise, and there was some swelling of the upper eyelid, but pressure on it caused no pain. He passed a good night, sleeping calmly. The next morning the pulse was 60, and regular; intellect clear; answers naturally; no headache; some heat about the orbit; the eyelids not more swollen.

During the following days no new phenomenon presented itself; the tumefaction of the eyelids gradually decreased, and after the eighth day entirely disappeared, leaving the eye perfectly sound. All that was to be seen was a slight scar on the margin of the tarsal cartilage of the lower eyelid, made during the rapid passage of the knife past it. The patient was kept in bed fifteen days, during which his diet was very low; after this he resumed his studies and his ordinary employments.

To determine the question which necessarily arises in this case, as to whether the knife entered the brain, M. Gintrac had recourse to experiment: knowing the depth which the knife had penetrated in the above case, and the direction it took, he carefully drove, by a hammer, the same knife through the corresponding place in the orbit of a dead child, aged eleven years; then, having opened the head, he assured himself that the instrument had traversed the vault of the cranium, the membranes of the brain, and had penetrated into the anterior cerebral lobe nine-thirteenthths of an inch. M. Gintrac would reject the notion as impossible, that the dura mater, with the brain, had, in the case related, only been pushed aside, on account of the intimate adhesion of the dura mater to the calvarium, its want of extensibility, the depth to which the knife had penetrated into the cranium, and the great resistance to its extraction.

The freedom from any after-accident from an injury of this nature is certainly remarkable, but by no means unparalleled; for, as is mentioned in the remarks on the above case, Mr. Selwin published in the *Lancet*, in 1838, the account of a case in which the blade of a knife entered the cranium, in a child four years old, through the upper part of the orbit, to the depth of about three inches and a half, wounding in its course, the optic nerve, and the levator of the upper lid. Its removal was long and troublesome, attended by some hemorrhage, and the wound giving vent to some fragments of brain. The child recovered, retaining its senses, but losing the vision of the eye which was wounded.

To this case may be added another, reported by M. Fournet, of an individual who, being desirous of destroying himself, took with his left hand a chisel, such as is used by cabinet-makers for making mortices in chairs, and having adapted it with its sharp edge to the centre of his cranium, armed his right hand with a wooden mallet, with which he drove the chisel into his skull up to the handle, this alone preventing its further penetration. In order to avoid too much movement in removing the instrument, M. Fournet made use of the proceeding adopted by Ambrose Paré to remove a portion of a blade from the cranium of the Duke of Guise. The patient was seated in a chair sufficiently low, the head being immovably fixed. M. Fournet got upon a table, and after having very tightly fixed the handle of the chisel in a vice, laid hold of the vice with his two hands, and exercised upon it a vertical, uniform, and continued traction. The instrument was thus removed, and after awhile the patient got well. In order to make himself acquainted with what part of the brain had been entered, M. Fournet drove into the cranium of a dead subject, at exactly the same point, in the same direction, and to the same depth, the very instrument which he had withdrawn from his patient. On opening the head, he found that it had traversed the inter-parietal (sagittal) suture, and the superior longitudinal sinus—had grazed by one side of the falx cerebri, between the two cerebral lobes, and had reached between the tentorium cerebelli, the posterior part of the corpus callosum, as far as the quadrigeminal tubercles, but without having at all injured them.

37. *Extensive Lacerated Wound of the Rectum and Bladder, produced by the Leg of a Chair.*—Mr. PRESCOTT HEWETT presented to the Pathological Society of London, Feb. 1, 1847, a specimen of this accident. The patient, a man, aged 43, was admitted into St. George's Hospital, under Mr. Keate, in a state of collapse, and complaining of severe pain about the vesical region, and over the lower part of the abdomen. He stated, that a short time previously, he had slipped off a table upon which he was standing, and that in his fall he had knocked over a chair, one of the legs of which having struck him on the side of the anus, had glanced off, and passed up the rectum. On examining the anal region, nothing was observed, with the exception of a slight laceration at the left margin of the anus, which did not penetrate more than a few lines in depth. A catheter was passed into the bladder, and a quantity of bloody urine drawn off. The pain soon spread over the whole of the abdomen, the collapse continued, and the patient sank, with symptoms of low peritonitis, in about twenty-one hours after his admission to the hospital. At the *post-mortem* examination no appearances of injury existed about the perineum; but there was some ecchymosis in the neighbourhood of the slight wound at the margin of the anus. At about two inches and a half from this opening, there was a large lacerated wound in the front part of the rectum, through which two fingers were easily passed into the bladder, at its fundus, and on laying open this organ another extensive laceration was found at the right side of its apex, leading into the cavity of the peritoneum. The leg of the chair having slipped up the rectum, had thus transfixed this organ and the bladder from its fundus to its apex. The peritoneum contained a large quantity of bloody fluid; mixed with recently-effused lymph.

The preparation is in the museum of St. George's Hospital.—*Lond. Med. Gaz.*, Feb. 1847.

38. *Tetanus following a lacerated Wound of the Cornea.*—The following example of this was communicated to the Royal Medical and Chirurgical Society (May 11, 1847), by GEORGE POLLOCK, Esq.

J. S., aged 33, was admitted into St. George's Hospital, under Mr. Keate, on the 10th of January, 1847. He had that morning received a cut from a gig whip on the left eye, which lacerated the cornea, dividing it through its entire thickness, and extending obliquely across from one margin nearly to the other. The aqueous humour had escaped, but there was no prolapsus iridis, and but little pain or chemosis. Goulard's lotion was applied, and an antimonial and aperient saline ordered every six hours. On the following day, the lids were distended and tense, and there was great chemosis; the conjunctiva almost hiding the cornea; the pain also was great in the globe and forehead. Six leeches were ordered to the left temple, and warm fomentations. The above symptoms were still further aggravated on the following day, when several punctures were made in the upper lid, which afforded immediate relief. On the third day, the leeches were repeated, and three grains of calomel and half a grain of opium were ordered twice in the day. On the sixth day, the visible portion of the cornea was cloudy; and on the seventh, there was purulent discharge from the tense and projecting globe. On the evening of the same day, the muscles of the face on the right side appeared contracted, and the patient complained of stiffness about the jaws. On the ninth day, trismus was fully established, and the hemiplegic condition of the face had become more distinct. He had been blistered and cupped on the previous day. A puncture was made into the projecting globe, and gave exit to some foul pus. General tetanic symptoms subsequently supervened, and he died on the following morning, an ineffectual attempt having been made to affect him with the vapour of ether. On examining the body, the vessels within the cranium seemed to be congested; as were those of the mucous membrane lining the larynx and pharynx. The liver and kidneys were also gorged with blood. The globe of the affected eye was completely disorganized, its different component structures being scarcely at all distinguishable. The author considers the above case interesting from its extreme rarity, as he is unaware of any record existing of a similar lesion producing corresponding results. The apparent paralysis of the face he also regards as an interesting complication, and it was unexplained by the *post mortem* examination. The irritation and distress occasioned by the attempt to administer the vapour of ether, were such as to forbid perse-

verance in this endeavour to relieve the patient's frightful sufferings. In the tabular view which the author gives of ten other cases of tetanus admitted into St. George's Hospital since 1841, it appears that only two recovered. Seven of the fatal cases were traumatic, and the symptoms of the disease declared themselves within three weeks of the receipt of the injury, with one exception. In four cases, the brain was rather congested, and in one there was softening of the spinal cord. The author remarks, that no satisfactory conclusions can be drawn from the treatment of these cases, both opium and Indian hemp having proved uncertain and unsatisfactory remedies.—*Lond. Med. Gaz.*, June, 1847.

Mr. Dalrymple expressed the opinion, in the correctness of which we entirely coincide, that the tetanus, in this instance, seems referable to the violent secondary attack of inflammation of the globe, and the extension of irritation to the ciliary nerves, rather than to the primary injury of the cornea.

39. *Treatment of Dissection-wounds.*—Dr. HARGRAVES recommends the following as a simple, and in his experience, efficacious plan of treating dissection-wounds. It is applicable to the fingers and the thumb, the parts most frequently liable to be wounded:—Wash them well for a few minutes in cold water, then suck them; immediately after apply a ligature a little above the cardiac side of the wound with such tightness as will induce decided congestion, which will be indicated by the colour of the parts; some blood will also flow from the injured surface, and a certain degree of numbness will follow its application. The ligature is then to be firmly tied and knotted, and allowed to remain on for at least twelve hours; I have kept it on for double that period, and still pursued my professional engagements.

The physiology of such treatment is explained by the ligature causing a permanent stasis in the fluids of the part injured on its distal side, and producing a well-marked plethora there; the greater the amount of it, the greater will be the impediment to absorption. The constriction caused by the ligature, will also oppose a barrier to the return of the venous and lymphatic fluids into the system, consequently to their being circulated through it, so that the poison is prevented entering into the constitution and destroying it, and will then be eliminated locally from the part where it was first applied; thus suffering and pain will be obviated, and life, valuable to all, will be preserved.—*Dublin Med. Press.*

40. *New Mode of bandaging Wounds and Stumps.*—M. BAUDENS communicated to the French Academy of Sciences, June 6th, a method which he had lately devised, of bringing together the edges of wounds in order to unite, and which he is now daily employing with success at the hospital. For instance: in order to unite the two flaps of integument, after the operation for removing the foot at the ankle, as practised by him, a bandage is fixed circularly above the stump, and in it are inserted two strong pins, one in front, the other behind, leaving their heads and points free. Around the two ends of the pins thus left exposed, a long and thick cotton thread is looped; the threads from both sides are next brought down to the edge of the stump, and crossed over the lips of the wound, which are held together by the fingers of an assistant. The thread, being crossed over to the opposite side, is now passed under the ends of the pin of that side, from which, again, it may be made to recross: by this crossing of the threads of both sides over the wound, a support is given to it similar to that afforded by a bandage. The crossing of the threads may be repeated as often as is deemed necessary; and the course of the threads of opposite sides may be parallel, or across, so as to make a figure of eight. The ends of the ligatures applied to the arteries, being also made fast to the pins, are in no danger of being torn away in removing any applications from the stump, as will sometimes happen with the old plan.

The advantages this plan offers are—the gentle pressure exercised by the thread; the avoidance of impregnation by the discharged matter, which cannot long remain in contact with the end of the stump; the open spaces left between the threads allow of a ready discharge of fluid matters from the wound; and the constant pull upon the circular bandage above the stump tends to draw the flesh towards its extremity, and so to render it conical.

This mode of bringing about the union of parts is, according to M. Baudens,

applicable to all kinds of wounds, a suitable support being first contrived for the pins, on which the traction is exerted.

It may be remarked, however, that many surgeons object to a circular bandage being applied just above the stump, at least with any tightness, such as M. Baudens' method would require, on account of the impediment it offers to the circulation in the part, and the consequent tendency it has to produce an œdematous state, and even worse results. Nevertheless, even if the evils of constriction above a stump have not been magnified, the device of M. Baudens is very ingenious, and no doubt will prove very convenient and useful in procuring the adhesion of the opposite lips of wounds in many cases.—*Lancet*, June 26th, 1847.

41. *Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle.* By ROBERT SMITH, Esq.—I was called upon to examine the body of Julia Darby, æt. 80, who had died of chronic pulmonary disease. Upon entering the room the appearances of the left shoulder-joint attracted my attention, and struck me as being different from those which attend the more common injuries of the joint. The shoulder had lost to a certain extent its natural rounded form; the acromion process, though unnaturally prominent, did not project as much as in any of the luxations of the head of the humerus. The breadth of the joint was doubled. Upon pressing beneath the acromion, I could plainly distinguish a portion of the head of the bone occupying the inner point of the glenoid cavity; it formed a tumour perceptible through the soft parts, while the remainder, and by far the larger portion of the head of the bone, lay beneath the level, and internal to the coracoid process; and between these two portions the finger sunk into a deep depression or sulcus, placed immediately below the coracoid process. The elbow could be brought into contact with the side, and there was no appreciable change in the length of the arm. Such were the external characters of the injury, and from these alone I was unable to pronounce positively as to its exact nature, but conjectured that it was some variety of luxation forwards. Upon removing the soft parts, the head of the bone presented itself, increased to nearly double its natural breadth; it lay beneath and internal to the coracoid process. The greater tubercle was completely broken off from the shaft of the humerus, and in situation corresponded to the inner part of the glenoid cavity; the fracture traversed the bicipital groove, which, in consequence of the displacement which the head of the bone had suffered, was situated exactly below the coracoid process; the glenoid cavity was changed both in form and size; it was smaller than natural, nearly flat, and broader above than below. A new shallow socket was formed for the head of the bone, upon the axillary margin of the scapula, and bony matter was deposited in the capsule, which was greatly enlarged; the cartilage had been nearly altogether removed from the head of the bone, which was covered by an ivory deposit.

What occurs in the cases under consideration is, in my opinion, simply this: a fracture, traversing the upper part of the bicipital groove, detaches the greater tubercle of the humerus, thus annulling the action upon the humerus of the supraspinatus, infra-spinatus, and teres minor; the folds of the axilla, the subscapularis, and the anterior portion of the deltoid, then, act almost unopposed, and draw the head of the bone forcibly inwards, against the inner part of the capsular ligament, and if, at the same time, the inner border of the glenoid cavity be broken (which I suspect is by no means a rare occurrence), the head of the bone passes still farther inwards, and beneath the coracoid process, amounting, at length, to an actual displacement, which is permitted by the increased size of the joint, just as a displacement of the head of the femur will often be the consequence of a fracture of the acetabulum.—*Dublin Quarterly Journal*, Nov. 1846.

42. *New and successful Operation for Pseudarthrosis.*—Dr. J. S. BUSHNAN, in a letter in the *Medical Times*, Jan. 16th, relates the three following cases, in which a new method of curing false joint, caused by ununited fracture, was employed by Prof. DIEFFENBACH, with success. The two first were related to him by the operator, the third he witnessed himself.

CASE I. In the winter session of 1845, a woman, thirty-three years of age, presented herself at the Klinik; she had broken her thigh fifteen months previ-

ously. On examination, the fractured limb was found to be nearly three inches shorter than its fellow, and much withered or reduced in size, except at the fractured part, where there was a soft, circumscribed and considerable swelling. The limb was movable like the end of a flail, and with difficulty she dragged it after her as she moved on crutches; it was not only useless, but a positive inconvenience, causing her frequently to fall, and to stumble at every threshold; the poor woman earnestly desired its removal. There was some soft callus between the fractured bones in which they moved, as in a capsule, but no bony deposit. Dieffenbach caused the absorption of this gristly matter by rubbing the ends of the bones together, and thus setting up inflammatory action; and, this object effected, he attempted to produce bony union; not, indeed, by the usual and very uncertain routine of very close and accurate contact—removing the ends of the bones by excision, escharotics, or setons. His experience of gunshot wounds had taught him, that when foreign bodies, as bullets, are lodged in bones, a great quantity of healthy and hard callus is always poured over them; and the experiments of Duhamel and Flourens had established the fact, which it had remained for the genius of Dieffenbach to turn to account. So, *having pierced the leg with a small scalpel down to the fractured bones, with a common gimlet, he drilled holes through each end of the bone, and about half an inch from each fractured extremity. Into each of these holes he introduced a small ivory peg, the same size as the gimlet, and strongly wedged them with a few strokes of a hammer.* The limb was then extended, placed in splints, and carefully bandaged. In ten days it was apparent, from the less degree of mobility between the ends of the fractured bone, that healthy callus has been thrown out; and so the ivory pegs were removed, and the wounds allowed to heal. In three months from the date of the operation, the patient walked without crutches, and was dismissed cured.

CASE II. A strong hard-working man, aged thirty-one, had a year previously broken his right humerus, at about its middle part, while employed on a railroad. No union had taken place and the limb was useless. The same treatment as in the former case was had recourse to; the bones were bored with a gimlet, small ivory pegs introduced, and at the end of ten days removed. In the course of treatment, however, Dieffenbach was not satisfied with the rapidity of the progress towards bony union; he therefore introduced smaller pegs for a few days; and so successful did the case prove, that, twelve weeks from the first introduction of the pegs, the man was in a condition to resume his employment.

CASE III. I had the satisfaction of examining this patient, and witnessing the operation. He was a robust and apparently healthy man, of forty years of age, who, eighteen months previously, had met with an accident upon a railroad, by which he was much bruised and his left humerus fractured at the insertion of the deltoid. The limb was perfectly useless and much withered: the false joint was capable of being moved in all directions, giving little or no pain. The limb bore the marks of setons and issues; and indeed the man had undergone a regular routine practice, under the care of the surgeons whom he had consulted. The operation was rapidly performed, as in the preceding cases, and the limb bandaged and placed in a sort of cradle. At the end of a week there was much swelling of the limb, and pain in the fractured parts, which were not as movable as before; on the twelfth day it was still more difficult to move the parts, and on attempting to do so it appeared as if it were a very stiff joint; then the pegs were removed, and I did not again see the case. In my next letter, I doubt not, I shall be able to report most favourably of it, and ultimately to assure the medical public of its successful termination.

Let us compare these satisfactory results with the uncertain and unsuccessful practices which have hitherto, in similar cases, been resorted to. All are agreed as to the difficulty and danger and want of success in the operation recommended by Celsus, and practised in modern times, of sawing off the ends of the bones. Dr. Physick's proposal to introduce a seton between the fractured extremities, is recorded to have been oftener unsuccessful than otherwise. [This is erroneous. See the number of this Journal for Jan., 1842, p. 54, *et seq*.] Cutting down to the bones and rubbing them with caustic potass, has signally failed; and, indeed, it may be said, that hitherto amputation has been the only certain cure for pseudarthrosis. Dieffenbach's operation, on the other hand, is neither dangerous, nor

difficult, nor painful : and it may be performed with every prospect of success, by any one with sufficient anatomical knowledge to enable him to avoid the great vessels and nerves of the limbs.

43. *Vertical Dislocation of the Patella (de champ).*—[In our number for April, 1843, a case is recorded by Dr. GAZZAM, of Pittsburg, in which the patella was dislocated so as to rest on its edge. A similar case was recorded by Dr. John Watson, of New York, (see this Journal for Oct. 1839, p. 252,) and another has recently occurred under the observation of M. PAYEN.

This species of displacement was first described by Moscati. Monteggia related some cases of it; nevertheless Manne, and Lèveillé after him, doubted whether it could occur, and Boyer denied its possibility. M. Malgaigne, in an elaborate memoir, (*Gaz. Méd. de Paris*, 1836, p. 673,) relates eight cases of this accident which he has collected from different authorities.

The following are the details of a case which has recently been related by M. Payen.]

"M. D., a strong robust man, about fifty years of age, was walking on the snow on the 15th of last December, when his right foot slipped backwards, thereby giving to the body a rapid rotatory movement in the same direction. Being on the point of falling, M. D. seized the railings that were within his reach, and thus immediately arrested, for the upper part of the body, the impulsion, which expended itself on the lower extremities. The violent torsion he thus experienced, occasioned him very acute pain in the right knee.

"It is quite certain that M. D. neither fell nor struck himself, as there was no mark upon the snow, and his clothes were not soiled. Persons came to his assistance, and supported him, when he made a few steps to enter his house.

"I was immediately sent for, and on my arrival, found the leg slightly flexed upon the thigh, the knee extremely painful, and strangely deformed. The patella was placed edgeways in front of the condyles of the femur, so that its external border, from having become anterior, raised the skin; its cutaneous surface was directed inwards and *rather backwards*, and its articular surface outwards and *rather forwards*, while its internal edge rested firmly on the anterior part of the extremity of the femur, a little external to the middle line; the muscles of the thigh were powerfully contracted, the slightest movement was impossible, and every effort caused very great pain.

"The patient having been placed in bed, with the limb resting on a mattress, I attempted to push the patella backwards by pressing the internal border from without inwards, with my thumbs, whilst with the other fingers I brought the external border from within outwards, but without success. I then flexed the thigh upon the pelvis, the leg being extended, as recommended by Valentine, and again tried, but with no better result. I then had recourse to the very rational method deduced by M. Malgaigne from his researches,* and which M. Coze† had previously successfully employed in a case of *de champ* dislocation—viz., to forced flexion of the leg. But the first attempts occasioned such violent pain, and the contraction of the muscles of the thigh was so energetic, that I considered this mode as impracticable, and that I ought to abandon it.

"Convinced, from the reasons given by M. Malgaigne, that the difficulty of reduction in this case was owing to the angle of the patella being wedged in what he calls the *subcondyloid space*, and being unable to dislodge it by flexing the limb, I imagined that I might arrive at the same result by the opposite proceeding, that is, by causing the patella to ascend. To effect this, the limb being extended on the bed, I ordered the patient to raise his leg as much as possible, my fingers being at the same time so placed as to cause the patella to turn over. The patient obeyed, and made a sudden and violent effort; the patella yielded, and became somewhat raised, and then, with the combined assistance of my fingers, immediately reduced to its proper position. The knee immediately regained its shape, and was scarcely at all painful. The patient was ordered to keep in bed. Dur-

* See his "Mémoire," p. 49, and his "Anat. Chirurg.," art. Articulations du Genou.

† "Mém. de la Société Méd. d'Emulation," t. ix., p. 517, and the "Mémoire" already quoted, p. 68.

ing the first day the articulation was surrounded with compresses dipped in cold water. On the following day a swelling made its appearance on the inside of the knee, which gave the sensation of fluctuation. There was, however, no ecchymosis. On the seventh day, the knee was restored to its ordinary size, and but little pain was felt on moving the patella from side to side. I surrounded the knee and the adjoining parts of the thigh and leg with a dextrined bandage, and the next day the patient was able to walk about on crutches.

"On the twenty-sixth day I removed the bandage, and replaced it by a laced knee-cap. The patient was ordered to keep his room for a few days longer, and six weeks after the accident, M. D. went out on foot with merely the aid of a stick. He is now quite recovered."

M. Payen makes the following remarks on this case, which are worthy of being quoted.

1st. At the time M. Malgaigne published his essay, and from the facts which he had collected, we were justified in stating that the internal *de champ* luxations were more common than the external (5 to 3). The two new cases of MM. Watson and Gazzam, however, restored the equilibrium. Now, the one above related places the majority on the other side, that is, in favour of the external dislocations (6 to 5).

2d. Of the known cases of *de champ* luxation, those produced by mere muscular contraction are much the most rare, since only two of the ten cases I have just related—one external, and the other internal—are of this description. The one I have mentioned was external; and it seems rational to admit that the greatest number of dislocations of the patella, caused by muscular action alone, ought to take place in this direction, for it is to this side that the triceps tends to draw the bone, and we know that it is on this same side that what are called spontaneous luxations are always observed.

3d. The above case fully confirms M. Malgaigne's ideas as to the cause of the difficulty of the reduction, and it is evident that the proceeding we adopted could succeed only by disengaging the angle of the patella from the subcondyloid space. As regards the mode of reduction, our case is very analogous to that of Monteggi (M. Malgaigne's sixteenth observation), in which the patella became spontaneously reduced during the efforts made by the patient in walking. In both cases the bone was dislodged from its wedged position by the same mechanism; we may, therefore, reasonably establish the precept, viz., to assist the reduction by making the patient stand up, or even by making him walk.

4th. As regards the facility of the reduction, our case holds an intermediate position between the extreme cases; and we may mention that, of the eight recorded by M. Malgaigne, the difficulty was so great in four that, in one, division of the muscles and of the ligamentum patellæ was resorted to without success; in two others, the elevation was obliged to be employed; and that in a fourth, the reduction was impossible. We may also add that in the case of Dr. Gazzam, the bone was not reduced till after the ligamentum patellæ had been divided, yet this division did not apparently facilitate the reduction.

5th. It has been said that the greater or less facility in the reduction depends on the cause of the displacement, and that the luxations of the patella produced by muscular contraction are more easy to reduce than others. May not this depend on the action of the muscles alone not being, generally speaking, sufficient, unless there is some anatomical disposition to favour the displacement; and which, consequently, facilitates the inverse route which the bone has to pass through in order to become reduced? Still I may remark, that in one case where M. Cuynat was obliged to employ the elevator, the dislocation was occasioned by muscular contraction. However, notwithstanding that, M. Malgaigne's opinion, as to the partial and spasmodic contractions of the triceps femoris being a cause of the luxation of the patella, is contested.* I, nevertheless, entirely coincide with it; indeed, it appears to me to be corroborated by the case we have related, for we cannot comprehend how there can be complete harmony of contraction in the inordinate and discordant movements above described. These isolated contractions of the muscular fibres appear to me incontestable; it is stated in all our treat-

* A. Berard, "Dict. de Méd.," vol. xxvii., p. 646.

ises on anatomy, that when the arm is raised, the anterior portion of the deltoid contributes to carry it forwards, and the posterior portion backwards; the same, in fact, with numerous other muscles. We, therefore, see no difficulty in acknowledging the preponderating contraction of one portion of the triceps femoris, as a cause of certain dislocations of the patella; and M. Malgaigne has very truly affirmed that the simultaneous action of all the muscles of a joint tends to consolidate, and not to modify, its relations.

6th. It has been stated that there may be some difficulty in ascertaining whether the *de champ* luxation is external or internal; in the above case, no doubt could possibly exist; and the patella, evidently placed outside the middle line, pointed out very clearly the direction of the displacement. I am not aware that it is the same in every case; still the examination of the surfaces of the patella ought to be an indication, as it proved to be in our patient.

7th. As to the information said to be furnished by the extensor tendon and the ligamentum patellæ—the internal border of which, being more tense, indicating an internal luxation, and *vice versa*—we have endeavoured in vain to appreciate its value; the ligamentum patellæ, when forcibly stretched, did not present any distinct or appreciable border.

8th. Lastly, in the case I have given, I have mentioned that the surfaces of the patella had become placed not merely laterally, but that the posterior was external, and at the same time rather anterior; and the anterior internal, and a little posterior. This disposition was sufficiently marked for me not to hesitate to admit the possibility of the *upside-down* luxation; and I am convinced that if M. D. had fallen on the knee after the displacement of the patella, this dislocation, in a more or less complete form, would have been produced.—*Revue Medico-Chirurgicale de Paris*, May 1847.

44. *Partial Dislocation of the Humerus and of the Femur.*—In 1824 the surgeon-in-chief of one of the Paris hospitals presented to the Academy a pathological specimen, taken from a man who died eight months after suffering from a dislocation of the humerus, which had not been reduced. It exhibited a false joint, formed on the one hand by the glenoid cavity of the scapula, and a small portion of the surface of the ribs, and on the other by the head of the humerus, which was grooved to receive the anterior border of the glenoid cavity, the two surfaces being thus locked together, so as to constitute a sort of hinge-joint. During life the only motions which could be performed were in a direction from before backwards, and that to a limited extent. In a case of spontaneous luxation of the femur, the same surgeon found the softened head of the bone resting on the anterior border of the cotyloid cavity, and there firmly locked, as in the preceding case. These, then, are two well authenticated instances of *partial dislocation* of the two orbicular articulations, the improbable occurrence of which led all authors to deny the possibility of their existence.—*Dupuytren on Injuries and Diseases of the Bones*. Translated by Le Gros Clarke.

45. *Treatment of Chronic Cystitis by injections of a solution of Nitrate of Silver.*—Dr. ROBERT L. MACDONNELL, in an interesting paper in the *British American Journal of Medical and Physical Science*, (Sept. 1847,) extols, in strong terms, the efficacy of injections of nitrate of silver, in chronic inflammation of the bladder,—a disease which has proved very refractory to other remedies, and which entails on those who labour under it, the most exquisite suffering. In proof of the value of the remedy, he relates four cases, one of which is the following:

“A gentleman consulted me last February, under the following circumstances. He had suffered for some months from inflammation of the bladder, marked by frequent desire to pass water, accompanied by heat and scalding, violent straining, pain in the region of the bladder, above the pubis and in the perineum, and a constant feeling of heat and weight in the lower portion of the abdomen. These symptoms gradually increased in severity. The urine became at first bloody, and afterwards purulent, and the desire to void it became so urgent, that it had to be yielded to at least every fifteen minutes; the discharge of the fluid being followed by pain and scalding at the neck of the bladder, and along the course of the urethra. His general health became impaired; and his sleep being so frequently

disturbed, a haggard and anxious expression of countenance, and extreme irritability of the system, were soon established.

"When he first consulted me, fully one-half of the fluid passed from the bladder was pure pus; and after repose, a deposit of blood-globules was found to intervene between this and the supernatant urine—the latter being highly alkaline, fetid, and albuminous. Examined microscopically, it exhibited some scales of nucleated epithelium, a large deposit of triple phosphate in prismatic crystals, pus, and blood-globules. There was no pain in the loins or along the ureters. He had a stricture of long standing, about one inch from the orifice of the urethra. In addition to the above characters, the urine was frequently mixed with tenacious masses of lymph, varying in length from half an inch to an inch,* and entangling a quantity of earthy matter; they frequently obstructed the passage of the urine through the stricture, and required to be broken up and squeezed through by the pressure of the patient's fingers.

"Having dilated the stricture, so as to allow a large-sized catheter (No. 11, Weiss) to pass, I determined to treat the disease by injections of nitrate of silver; and accordingly, on the 17th of February, I injected into the bladder, a lotion composed of eight grains of lunar caustic, two drachms of tincture of hyoscyamus, and four ounces of distilled water.

"The injection caused hardly any inconvenience, except that of inducing a strong desire to empty the bladder, which was prevented by compressing the penis, until the fluid had been in the bladder for about one minute, when it was allowed to escape. The next day, the patient stated that he was somewhat better, but the quantity of pus and blood was not, however, much diminished, and the flakes of lymph were more numerous and larger than before. Although he continued improving, yet, as the amendment was not as rapid as I anticipated, injection of the viscus was again resorted to on the 5th of March. On this occasion, the quantity of caustic was increased to sixteen grains in the four ounces of distilled water, and the hyoscyamus was omitted. A decided improvement immediately followed; the frequency of making water was greatly diminished; instead of requiring to be voided every fifteen minutes, the bladder could retain its contents for more than two hours at a time, and the quantity of pus had greatly decreased. An injection, of the same strength, was again employed on the 28th of March, and with happy results. The urine could now be retained for three or four hours; was passed without pain or scalding; was clear and transparent, and, to the naked eye, free from pus; but, when examined microscopically, a deposit of pus-globules and some epithelial scales were perceptible. On the 18th of April, I repeated the injection, and since then he has been completely free from any symptoms of his troublesome disease; he has resumed his former mode of life and pursuits, and has been subject to various changes of temperature whilst travelling, without experiencing the least return of his former symptoms."

The method of injecting the bladder which Dr. MacDonnell has found most efficient is the following:—

"The patient being placed either in the erect position or on a sofa, a gum elastic catheter, about the size of No. 9 or 10 (Weiss), is introduced, and water, at the temperature of 98° Fahr, is injected through this into the bladder, by means of a caoutchouc bag, or, what I prefer, a syringe, with a "three-way valve," by which the fluid can be drawn back from the cavity if necessary. After the bladder has been completely cleansed of any fetid urine and mucus which may be contained in it, the solution of the caustic, being heated to the same degree, is to be introduced in a similar manner, and allowed to remain there for about one minute, care being taken, by compressing the urethra, to prevent its being forcibly ejected by the violent straining that is certain to be induced. The quantity of water or solution should never exceed four ounces, for though the bladder in its healthy state is capable of containing nearly a pint and a half of urine, without being

* C'est encore dans les cas de suppuration, qu'on trouve des productions pseudo-membraneuses dont parlent les auteurs. C'est l'expulsion de ces fausses membranes par l'urètre qui a fait répéter à tant de médecins que la tunique muqueuse de la vessie pouvait être entièrement détachée et expulsée par portions avec les urines.
—FERIUS, Dict. de Méd., Art. *Cystite*.

over distended, yet as the quantity it is capable of retaining in severe chronic inflammation, seldom exceeds a few tablespoonfuls, the bladder accommodates itself to its diminished contents, and gradually becomes smaller, and consequently, a large injection would act injuriously in two ways—by over distending the organ, or by passing up into the ureters. In fact, we find it unnecessary to use a larger quantity of the solution than I have mentioned, for it requires some address to introduce even that amount without resorting to force. The patient is then ordered a warm bath, and should the urine become bloody or mixed with shreddy concretions, he should use frequent fomentations and anodynes. But these symptoms seldom last for more than a few hours, and our patient should always be informed that such consequences are likely to be the immediate effects of the operation.

“My patients have not suffered from retention of urine, which it appears frequently follows the use of the solid nitrate in the practice of Lallemand, nor have they had any inconvenience which was not readily allayed by an opiate.

“The advantages which I consider the solution of nitrate of silver possesses over that substance in a solid form are, first, that we can employ it of various strengths, from one to four grains, or even stronger if necessary. Secondly, we are certain that the application comes in contact with the entire diseased surface. Thirdly, we are also satisfied that it does not act more violently on one part than on another. Fourthly, it is more readily employed by an inexperienced operator; and, above all, it cannot possibly be attended with any risk, from the apprehension of which it is not easy to divest the mind, when using the *porte-caustique* of Lallemand, and together with the above advantages, it has this also to recommend it, that it will be found at least equally successful.”

46. *Successful Extirpation of an Ovarian Tumour.*—Dr. WOYEIKOWSKI, of Quingey, was called to a woman who was some hours in labour—the pains were trifling, the waters had escaped, and a fleshy tumour protruded shortly after from the vagina. The patient, aged 40, had had three children within the previous three years—but while she experienced the same symptoms of pregnancy in the present instance as in the former ones, she was surprised at going three months beyond her proper time. On examination Dr. W. found the protruding tumour to be the uterus, about three times its natural size,—the os sufficiently open to admit the index finger; he was unable to return the parts; the abdomen was greatly distended with fluid, and was so tender to the touch as to prevent any examination of the contained organs. Paracentesis was performed with a trocar, and thirty-five litres of a yellowish, transparent, inodorous fluid drawn off. The hand was now enabled to detect a tumour in the abdomen the size of a man's head, round, irregular in its surface, perfectly indolent, and floating in the upper pelvis; the patient felt and moved it with her hands, and implored that it might be taken away. The uterus could now be returned without any difficulty, and the other contents of the abdomen appeared perfectly sound; the patient was kept in bed on rigidly low diet until next day, when a consultation was requested with those surgeons whom she had applied to formerly, when she found the ninth month had passed without any signs of labour coming on. The diagnosis was found very embarrassing, but gastrotomy was decided on. The patient was placed on a reclining couch; Dr. W. stood on the right side of her and an assistant on the left; an incision was made through the skin with a convex bistoury along the linea alba from three fingers' breadth above the umbilicus down to the pubis; the cellular tissue and aponeurosis were next divided in the same direction, taking care not to touch the peritoneum, which was easily avoided, there being no subcutaneous fat; a small opening was now made into the peritoneum at the highest part of the previous incision, through which the index finger of the left hand was passed and against its point the end of a button bistoury rested, with which the peritoneum was laid open the whole length of the wound in the parietes, and immediately full thirty litres more of a similar fluid to what had been discharged by the trocar previously, was received in a vessel in readiness, besides what fell on the floor. The great omentum and small intestines immediately protruded and lay on the patient's thighs. The assistant (M. Matusewicz) returned them and retained them *in situ* with a napkin spread with salve. A round tuberculated swelling was now seen, firm to the touch, floating in the superior pelvis, and attached to the right side of the uterus near its fundus by a

pedicle half an inch in diameter and three inches long. An exploring puncture was made into this tumour with the bistoury, and the sensation given to the hand was as if the knife was traversing old lard; this convinced the operator that it was a scirrhus ovary. One of the assistants raised it in his hands while a ligature was put round the pedicle close to the uterus; the end of the ligature was retained out of the wound, and the tumour was detached by a stroke of the knife. The lips of the wound were immediately brought together and retained by eight points of suture (quill) tied on pieces of diachylon plaster rolled up. The patient was then put to bed lying on her back with her legs and thighs flexed. Cloths wrung out of cold water were applied to the abdomen, and ordered to be renewed every five minutes; low diet, and a few spoonfuls of lemonade for a drink. The operation lasted eight minutes. The tumour was carefully examined; it weighed six pounds and a half, (fr.) it was smooth and irregular on its surface, and the rudiments of the Fallopian tube and its extremity were easily distinguished on it. Its structure was lardaceous, yellow, and very resisting, and some small collections of pus were found in its substance. On the 2d of May (twenty-four hours after the operation) she remained without pain or fever; the lips of the wound were a little tumefied. 3d. General state continued satisfactory; lips of the wound a little more tumid; the patient had enjoyed a quiet sleep, and begged something more nutritious to eat, which it was thought proper to refuse. 4th. A kindly suppuration was established. The ligature soon came away, the wound healed, and on the 25th day after the operation she walked home to a neighbouring town, with a swathe round her, such as is worn after confinement. About four months after this, this woman became pregnant, and at the usual period was delivered of a healthy boy; she lay in again of another boy equally thriving in December last. It would seem that the assertion made by the father of medicine, that male children were developed at the right side and females at the left, might, *en passant*, be proved to be incorrect for this case, for it was the right ovary that was extirpated in this instance.—*Dublin Med. Press*, June 30th, from *Journ. de Méd et de Chirurg.*

47. *Vesico-vaginal Fistula*.—The *Comptes Rendus*, for the 14th of June, contains an interesting report, by MM. ROUX, VELPEAU and LALLEMAND, on a memoir of Dr. JOBERT, on vesico-vaginal fistula, and on a new mode of operating, devised by himself.

The report commences by observing that the present memoir is, in some measure, a continuation of that read by the author on the treatment of some forms of urinary fistula in men, too extensive to be cured by the ordinary means. The conditions of these male urinary fistula are of the same character as the vesico-vaginal in the female; and the same principles of cure M. Jobert applies in both. Before proceeding with the description of the plan of M. Jobert, it is as well to glance at the different processes which have been employed to repair the loss of substance.

The most ancient method is that of transplantation; as where a piece of skin was removed from the forehead or arm to repair a portion of the nose. Now, in this manœuvre, the portion of integument, being quite removed from the original source of its vascular supply, is very liable to mortify, and its purpose thus fails. Dr. Jobert, in his first attempts to heal vesico-vaginal fistulas, had recourse to this plan; but he has now entirely given it up, although he employed it successfully in two cases.

An improvement in autoplasmic operations was contrived by using a portion of skin from the immediate neighbourhood of the chasm it was required to fill, but leaving it attached by a pedicle, so that it still continued to receive blood from some of its original channels. This process has been called autoplasty by dissection.

When the skin is very elastic and loose, and when it has beneath it an abundance of areolar tissue, a portion of it may be drawn to one side, without so much stretching being necessary as to endanger union. This is what Dr. Jobert has done when he has made use of a part of the scrotum to repair great losses of the substance of the urethra. This variety of autoplasty (*autoplastie par glissement*) is still more advantageous than the preceding, since the skin here has not at all to be dissected off to fill up the breach, but only to be relieved from tension, so as to

contract adhesion. And it is readily seen how the resulting integrity of the subcutaneous areolar tissue favors the vitality of the portion of skin.

It is true that all the tissues have not, like the scrotum, numerous folds easy to unfold in any direction; but those which have beneath an abundant cellular tissue will still admit of being considerably displaced, when, at some distance from the margins of the loss of substance to be repaired, a sufficiently long incision is made in the direction of its great diameter. Then the parts being brought together by suture, and stretching tells especially on this incision previously made. This last method is more strictly one of sliding (*glissement*) than the preceding. It is now necessary to examine what are the difficulties to be overcome in the healing of vesico-vaginal fistula.

The first obstacle presenting itself is the constant contact of the urine with the inner orifice. In urethral fistula, the urine is only discharged at intervals, and is under the control of the will; but in a fistula opening into the bladder itself, the urine will continually dribble through it. And from the slight thickness of the septum between the bladder and vagina, the fistula cannot be long, oblique, or sinuous, but the urine immediately passes into the vagina: and it also follows, that when we wish to unite the margins, they cannot be brought into contact but to a little extent. Lastly, the partition between the bladder and vagina being between two cavities, is loose, and has no firm support on each side, and the borders brought into apposition may easily be drawn to one or the other side; and, moreover, the surfaces adapted for union may be in actual contact only by the mucous membrane of the bladder, or by that of the vagina, and we know that mucous membranes cannot contract adhesions. These things being granted, we shall comprehend what takes place in the different kinds of vesico-vaginal fistula, according to their extent, their date, &c.

At the termination of a difficult delivery, for example, if the fissure be very narrow, and the inflammation of the surrounding parts be sufficiently intense, as by their swelling to bring the margins into contact, a spontaneous cure may happen. But this happy termination is exceedingly rare, because it is difficult to maintain the margins sufficiently long, and intimately in contact, for a distended bladder may at once destroy the work of cicatrization.

When inflammation subsides before cicatrization is complete, the urine will escape through the accidental opening left. If, then, a more free escape for the urine be provided by a catheter than that presented by the fistular orifice, the obstacle to complete union is removed; but that it may be so, the orifice must be almost capillary. After a time, cauterization may be used to a small orifice with callous edges, to cause inflammation, and consequent union. But every time cauterization is employed, a portion of substance is destroyed, more in proportion as the cautery is more potent; also, the chance of producing union decreases every time the cautery is employed afresh.

When vesico-vaginal fistulae are not so narrow that inflammation may bring their borders into contact, some artificial proceeding must be adopted to do so, and to maintain the apposition during the time necessary for cicatrization; these cases are by far the more numerous. Provided the opening be not too extensive, it is possible to maintain its borders in apposition, without too great a stretching of the neighbouring tissues, and union may take place before the sutures tear through the flesh, since five or six days suffice for the organization of a cicatrice between surfaces fitted for it.

But the vesico-vaginal septum may suffer from still greater losses of substance, and the opening deserves no longer the name of a fistula, as it may be so wide as to allow the bladder to be inverted into the vagina: here, then, the ordinary means of union are inefficient. When even the suture may be able to draw the opposite margins into contact, so much dragging is caused, that soon the overstretched tissue tears, and the sutures lose their hold to a greater or less extent, and thus the opening is re-formed, the urine can still escape, and the contact is not so close as to permit the occurrence of adhesion. Hence, such severe cases have been regarded as beyond the resources of art, for no method of which surgeons were cognizant sufficed for their cure; they were obliged to have recourse to mechanical expedients to render the patient's misery less.

M. Jobert would not give such cases up in despair, but applied himself to the

invention of a method of operating, the application of which it seems difficult to limit, since by it he has repaired nearly the entire vesico-vaginal septum, which had been destroyed by gangrene, in the course of a laborious confinement.

After having successfully employed *autoplastie par glissement* to close up wide urethral fistulæ situated in front of the scrotum, M. Jobert thought he might apply the same plan to considerable losses of substance of the vesico-vaginal partition, and he used it in cases where the second mode of autoplasmic operating—that where the flap is dissected up, but left attached by a pedicle—had completely failed. The following are some of the anatomical grounds on which this new idea was founded:—

The vesico-vaginal septum consists of two distinct walls, applied to each other, but not confounded, the free or mucous surfaces of which enter into the construction of organs of different functions. The wall of the bladder is separated from that of the vagina by an abundant and elastic cellular tissue, allowing of the distension of one of the cavities independent of the other, and of the displacement of one without the other. It is, then, possible to cut the wall of the vagina without interfering with the mucous membrane of the bladder, or with its muscular layer outside. Now this wall of the bladder is alone necessary to the repair of the viscus; we can then, in cases of considerable destruction of the double septum, do away with the tension of the parietes of the vagina after the union of the edges of the fistula, by cutting through this wall only, outside the points of suture. The dragging produced by too great tension is thus rendered naught, the rapid tearing of the flesh by the threads is consequently prevented, as also the separation of the margins. Thus, for example, the vesico-vaginal septum being destroyed, from the neck of the bladder nearly to its fundus, the borders of this enormous fissure may be brought together, and placed in contact, from before backwards, by employing sutures; then, if a transverse incision be made in the wall of the vagina, between the threads and the neck of the womb, without penetrating to the muscular parietes of the bladder, the uterus may regain its position by the divarication of the lips of the incision, and the cellular coat of the bladder alone is exposed, at the upper end of the vagina. In this way the remnants of the vesico-vaginal septum, preserving their entire thickness, and being in contact, may be maintained for a long time in apposition, and without suffering from dragging, although the margins have not been previously shaved. On the other hand, the posterior wall of the bladder being drawn downwards and forwards, becomes the inferior wall, and serves to close the opening into the bladder. If the bladder thus completed is rendered smaller, it is made up of the same layers—viz., mucous membrane and muscular fibres. The evacuation of urine may be rendered more frequent, but still it is subject to the will.

The preceding is not merely hypothetical, but the result of observations; and M. Jobert had a patient, whose vesico-vaginal septum was destroyed, as above supposed, by gangrene, which also had extended to the urethra; and yet the new neck of the bladder, though formed of only remnants, allowed the urine to be retained for three hours, under all the ordinary movements of the body, and was under the control of the will.

If the fistula be elongated, and occupy the median line, a double incision may be made from behind forwards, between the line of the sutures and the lateral walls of the vagina, in order to avoid the evils of any transverse draggings. If the fistula be on the right or on the left side, the incision should be made in the corresponding vaginal wall, which alone would be stretched. Then the line of suture along with the wound, would be drawn towards the median line. In a word, incisions ought to be made in the vaginal walls at all the tense parts which appear affected by dragging. Such is the plan of Dr. Jobert, which has the further advantage of being without danger. The author has found it to succeed in six out of eight cases.

As to the operation, it is less difficult than appears at first sight. Some time back, Lisfranc showed that the neck of the womb might, without inconvenience, and with ease, be drawn down to the opening of the vulva, by seizing it on each side. Now, the uterus, in descending, draws with it the vesico-vaginal partition; it is then sufficient for an assistant to retain it in its depressed position, whilst the posterior wall of the vagina is pressed down towards the rectum, in order to give

the operator the opportunity of bringing together the borders of the fistula almost as easily as he could external parts. The threads of the suture are then passed through by an instrument. Before letting go the neck of the womb, to allow it to re-ascend, any tension or dragging must be done away with by incision. The ends of the sutures are cut off on a level with the vulva. A piece of amadon is introduced into the vagina, to absorb the blood, and a catheter placed in the bladder, to give free vent to the urine.

The reporters conclude by remarking that this plan allows us to hope for the cure of vesico-vaginal fistula, which would be pronounced incurable by any other means. The size of the opening is no longer to be regarded as an insurmountable obstacle; nor is its deep situation, its longitudinal or oblique direction, or its irregular form.

The preceding abstract of the report on M. Jobert's memoir is rather long, but we thought its subject of so high importance, as to give it so far in full. Any improvement of our modes of relieving those formidable and most miserable ruptures and destructions of the substance of the septum between the bladder and vagina, and of the perineum, to which women are exposed in difficult childbirth, must be received as a great boon. We cannot here help noticing the likeness in principle between the plan of M. Jobert for the cure of vaginal fistulæ, and that practised by Mr. Fergusson for cleft palate.—*Lancet*, Aug. 7th, 1847.

48. *New Method of Treatment for Prolapsus Ani.* By T.G. HAKE, M. D., (*London Medical Gazette*, Feb. 1847.)—This method consists in returning the bowel or hemorrhoidal tumours with great care after the daily motion; in assisting its return by means of soap-lather; in applying a coil of moist sponge firmly upon the anus, and, while retaining it there with one hand, to bring the nates together by means of a broad strip of adhesive plaster, as in approximating the edges of a wound.

This method Dr. Hake has tried in several cases, and it has never failed of success. It was first suggested by a patient whose experience is embodied in the annexed letter.

"The account I promised you is as follows:—More than seven years ago, after very severe discipline, which I suppose was necessary to treat an illness that lasted many weeks, I began to be troubled with a prolapsus ani to a distressing extent. I had suffered from symptoms of it occasionally—slight symptoms, I mean, hardly worth mentioning—at times during several years before, but I took no notice of them, not knowing, indeed, what they indicated; and from time to time they came and disappeared. But in 1839, after the illness I have alluded to, there was a prolapsus every day after breakfast, and I mentioned it to a surgeon, who gave me a wash for it, but it did no good, and he did not warn me sufficiently against what it might come to. The consequence was that it went on, and did come to so much as to make my life very miserable. It generally cost me much time and trouble to restore the part to its place, and when it had been restored, there was no certainty how long it would stay there; in addition to this, there were irritation and bleeding, and running of a yellowish sort of lymph, as often as the evil returned, so that all standing, walking, and riding, were sure to lead to great suffering, and the prolapsus at times was very large. I could not find that I derived any considerable, and certainly no lasting benefit, from any treatment I was under; and though, by Mr. Copland's advice, I made use of the belts and bandages that are advised in such cases, they brought me, upon the whole, nearly as much annoyance as they relieved. This made me determine to go to work for myself, and, with more thought, and a longer time, perhaps, than you would suppose, I came at last to the following very simple contrivance, for which I can never be thankful enough when I say it has answered perfectly from the beginning, and has given me such entire comfort, with the power to do what I like without pain or inconvenience, as I never expected to have again. My contrivance is this. Take a piece of sponge four or five inches long, an inch and a half wide, and half an inch thick, the more elastic a bit you can find the better; roll this, in a damp but not wet state, pretty tightly, so that the roll, if relaxed, would be ready to spring back into its full length, and it will then make a roll of some little substance round, but still soft, and its length, when thus rolled, will of course be an inch and a half. Apply it then lengthwise to the anus, so that it may be pressed, about the

centre of it, quite home and firmly to that part. Taking care that it may remain so, stretch a length of adhesive plaster, about 14 inches long, and $3\frac{1}{2}$ wide, more or less, straight across the nates, rather low down, and contrive so that while the plaster adheres on one side, you press the other side closer to its opposite before you fix the length finally where it is to remain. Then sit down, at first gently upon it, and it will become very firm and fast as long as the plaster is good. I need not say that these two pressures constantly going on do the work capitally, and without any inconvenience worth speaking of—I mean the two pressures of the roll of sponge always striving to unwrap itself, and the cross-band of adhesive plaster always keeping it from doing so by holding the nates sufficiently close together to hinder it. The working is really perfect when a little use and management have got a person into the way of it. But to facilitate matters I will set down a few observations, at the risk of being tedious and more particular than I need be.

“I never put this on until that time of day when I am going to be standing about, or to take exercise, whether walking, riding, or driving; but it should be put on then for all of these. In the evening, I take off the plaster, but leave the sponge in its place, where it has got by that time so firmly fixed by gradual spreading and swelling, that there is no danger that anything short of a great exertion will loosen it, and it is, of course, more comfortable to do without the plaster when it is not wanted. The sponge should be washed in cold water every time it is taken off, and in cold weather the plaster should just cross the fire before it is put on; in moderately warm weather it will adhere of itself, especially if it is sat upon for half a minute. The same plaster is better the second day than even the first, and will do very well the third day; this where economy is an object.

“Wash the parts where the plaster goes every morning, or oftener, with cold water, or water and vinegar; wash them well, and the skin will never suffer.

“If the plaster leaves something sticky behind it, when it is taken off, rub it with a very little spirit of wine, and the towel will remove it.

“If there be an irritation about the anus, or gut that comes down, wash it with vinegar and water, and the relief will be wonderful, and that part of the evil soon cured. This wash cannot be too much praised for this purpose, for piles, and for the like. I leave it for you to say whether something might not be dropped upon the sponge, or the sponge dipped in something which would promote a complete cure. What I have said is perfectly cleanly, secures exercise and comfort, and very gradually, I believe, tends to set things right again.”

49. *Cold Water in cases of severe Burns.* By Dr. KÜSTEN.—A case of very extensive burning, treated most successfully by the prolonged application of cold water, has been recorded by Dr. Küsten, the particulars of which seem to indicate the great advantage which may probably be derived from this mode of treatment in most cases of severe burns. Dr. Küsten was first led to set a high value on the use of cold water in such cases, by observing the good effects which resulted from it, in the case of his own child, nine months old, which was severely scalded about the neck, chest, and abdomen, by the upsetting of a tea-kettle containing boiling water. The application of cold water was commenced immediately after the child's dress was removed: very abundant vesicative power had already taken place in the form of numerous large and small blisters. For six hours, without intermission, the application of cold wet cloths was continued: the cloths being replaced by others as quickly as they became warm. At the end of this time, the smaller vesicles had quite disappeared, and the places occupied by the larger ones were indicated by more or less intensely reddened spots. The child meanwhile had fallen asleep, and it slept soundly the whole night, (the accident having occurred about six o'clock in the evening). On the following morning the only trace of the burn consisted of a dry shrivelled appearance of the cuticle on one small spot; and this peeled off in a day or two.

The case, however, in which the beneficial effects of this mode of treatment were especially illustrated, occurred in a brandy distiller, who, in consequence of the bursting of the still, was extensively scalded over the body by the boiling and blazing spirit. The man's head, at the time of the accident, was fortunately covered by a thick cloth cap, and escaped injury; but the upper part of the body, being defended only by a shirt, suffered severely. When seen by Dr. Küsten,

about an hour after the accident, the patient was almost unconscious: he lay moaning, and constantly ejaculating "Fire!" After washing off, by means of a watering-pot, the layers of scraped potatoes which had been spread over the burned surface, it was found that over the whole body, down to the lower part of the thighs, there was scarcely a spot which was not more or less injured. The slightest degree of injury was manifested by vesication; but over the neck, chest, arms, and abdomen, the skin in places was quite destroyed. Dr. Küsten immediately covered the entire burnt surface with linen; and for an hour this was kept constantly cold and wet, by pouring cold water over it from a watering-pot. After pausing for five or six minutes, the application of cold water was renewed, and continued for another hour, at the end of which time the man had recovered from his state of partial unconsciousness. He was then left, with directions that the application of the cold water should be continued as before. When seen about six hours afterwards, the patient was in a promising condition: his face was slightly flushed; eyes open; pulse 100. He complains of a sense of general burning, which was relieved by drinking, and by the repeated application of cold water to the burnt surface. This application was continued until the patient complained of being cold. On examining the injured part the following day, the places which were previously occupied by the vesications, were indicated only by intense redness; the other part had much the same appearance as before: portions of the destroyed skin came off on removing the dressing. The injured parts were then dressed with cloths dipped in vinegar, and kept constantly wet by sprinkling cold water on them. The patient had some sleep during the night, and on the following day the reddened portions of skin had resumed almost their natural colour: commencing granulations were observed along the margins, and within the spaces of the surfaces, where the skin had been destroyed. The pulse was 90, the thirst less intense, and the tongue less dry than on the preceding day. For nine more days the same treatment was continued, and with the happiest results, for at the end of this time the wounds were almost healed.

In the treatment of such severe wounds by this mode, the dressing must, of course, be changed at least once in the twenty-four hours.

Dr. Küsten mentions one or two other instances, in which the healing of burns, of various degrees of severity, was effected most rapidly and satisfactorily by this continued application of cold water.—*Lond. Med. Gaz.*, July, from *Caspar's Wöchenschrift*, May 1, 1847.

50. *Treatment of Burns with Treacle*.—Mr. BULLEY has introduced to the notice of the profession, molasses as a dressing for burns. The plan he recommends is to steep cloths in a mixture of one part treacle to two of water, and apply them over the burnt surface. He attributes the beneficial results of this mode of treatment to the prevention of those metastases of inflammation to internal organs which were so liable to take place after severe burns. It should be applied warm, (at a temperature of 98°.) He attributes its remedial power to fermentation which takes place in the treacle. He had found that anything producing cold renders the liability to metastasis greater.—*Provincial Med. and Surg. Journal*, Aug. 25, 1847.

51. *Treatment of Erysipelas by Linear Blisters*.—M. PIORRY affirms that he has discovered a means of limiting the inflammatory action of erysipelas. This means consists in applying narrow blisters around the entire circumference of the inflamed skin, at a distance of an inch or two from its border. Unfortunately for M. Piorry's fame, this same discovery was made long ago, by the late Professor Physick, of Philadelphia; but, unhappily for humanity, it does not always succeed.

52. *Hypertrophy of the Septum Nasi successfully treated*. By M. BRULET, of Dijon. —This affection is so rare that it has not been mentioned by authors, and both its diagnosis and treatment have to be determined.

"A boy, 10 years old, was brought to me," the author remarks, "to be relieved of a tumour seated in the nasal fossæ, which were obliterated by it. The tumour was as hard as bone, and seated immediately at the external orifice of these cavi-

ties; it was manifestly developed in the cartilaginous septum, forming a plug like a hard ball, of the size of a small nut. Regarding it as an hypertrophy of the cartilage, I believed that it might be removed. I proceeded in the following manner: I separated the inferior part of the septum, even unto its junction to the upper lip; a cut with scissors was sufficient for this. I then cut away with a tenotome all the hypertrophied part; with one point of suture reunion was immediately effected, and it was impossible to perceive where the operation had been performed to relieve the child of this singular obtrusion."

We have but once met with an analogous case. A child of 10 years old was believed to have a polypus. The right nostril was half obstructed by a reddish, hard, rounded projection, which manifestly projected from the cartilaginous septum, and yet it was not a simple obliquity, since, in the left nostril, the septum maintained its normal direction. As the obstruction was not complete, and the mucous membrane appeared a little swelled, we contented ourselves with prescribing slight cauterization, with nitrate of silver, and have not seen the child since.

The "*Annales de la Société de Médecine d'Anvers*," for January, 1847, contains a case, if not identical, at least analogous to that of M. Brulet. It is described as follows.

Obliquity and considerably increased length of the cartilages of the septum nasi; resection of a part of the cartilage; disappearance of the deformity. By M. HEYLEN.—J. C., aged 21 years, had from youth a very disagreeable deformity, consisting in a deviation to the right of the inferior part of the cartilage of the septum nasi, and a too great length of this cartilage, which formed a tumour in the right nostril, projecting from a line beneath the sub-septum, without any change in the relation of this to the other parts of the nose. Besides the deformity, pain was produced by the motions of the mouth. For a long time we hoped to rectify the cartilage by dilatation; but its length prevented success. We then proposed to resect the projecting portion of the septum. An incision made on the right side of the cartilage allowed the mucous membrane covering the projecting part to be dissected from both sides, and the projection to be separated with scissors. The resection of the cartilage was easily effected, but the tenuity of the mucous membrane opposed the reunion of the edges of the wound, and we had to introduce the end of a small sound, protected with agglutinative bandages, into the right nostril, to keep the septum in place during the cicatrization.

Three days after the operation no inflammation had occurred; the septum was in a greatly improved position, and its obliquity was no longer perceptible externally. In nine days cicatrization was complete, and the deformity had quite disappeared.

The fear of making a cicatrix under the septum of the nose, and thereby increasing the obliquity, induced us to choose this mode of operating. Still we think there would be no risk in making an incision of the septum laterally, in dissecting the cartilage from both sides, separating the parts, and then uniting the wound, to obtain cicatrization by the first intention.—*Ranking's Abstract*, vol. v., from *Rev. Méd. Chirurg. de Paris*, Feb. 1847.

53. *Sublingual Tumour.—Salivary Calculus.—Dilatation of Wharton's Duct.*—As cases of salivary calculi, especially in Wharton's duct, are very rare, we record the following case briefly, as contained in the *Gazette des Hôpitaux*:—It occurred in the practice of M. ROBERT, at the Hospital Beaujon, in a man who had suffered nearly eight years from an enlargement of the sub-maxillary gland and a sublingual tumour. The tumour, small at first, had gone on gradually increasing up to the time of his admission into the hospital, when it had attained such a magnitude as considerably to impede the movements of the tongue, and to interfere with the speech and deglutition. M. Robert made an incision over Wharton's duct, when there issued a large quantity of viscous and transparent saliva, together with a calculous concretion, of the volume and form of a pistachio nut. The duct was enormously dilated, having the calibre of a large goose-quill. After the incision had been made, the tumour shrunk and disappeared, showing that it was chiefly dependent on the arrest of the flow of saliva, and not solely on the presence of the calculus. The orifice of the canal was not completely closed; and

hence it was that the patient had been enabled to postpone an operation so long a time.

The reporter of this case in the *Gazette*, states that a case, given by Sabatier, is the first of the kind on record, and that, since his time, three cases have been collected and published by Dr. Dourlens, of Lille, in 1837. The first of these three cases was mistaken by a surgeon for an abscess, depending on alveolar caries, and a canine and two molar teeth were extracted. But the tumour went on increasing, and M. Dourlens detected a salivary calculus in Wharton's duct, which he extracted after some trouble, on account of adhesions which had been formed. It was of the size of a garden bean, and weighed ten grains. The second case was that of a woman, aged twenty-seven, who had suffered seven years from acute pain in the left side of the lower jaw, radiating thence to the neck and ear. For some months the speech and swallowing had been affected, and the saliva pressed out was thick and purulent. As in the former case, a hard movable tumour, and of large size, was detected. The calculus was cut down upon, and removed, its many adhesions having been destroyed. It was of the size and form of an almond, and weighed fifteen grains. The third case was similar to that reported above. The calculus was for some time but a matter of inconvenience, but by-and-by set up active inflammation, accompanied with a purulent discharge in the mouth, and succeeded by a chronic inflammatory state, lasting for two years, and giving rise to the formation of pus. The calculus could easily be felt beneath the buccal mucous membrane, and appeared of the size of a haricot bean. The Whartonian duct was greatly dilated. As the concretion was only a source of inconvenience, M. Dujardin did not risk an operation.—*Lancet*, June 12th, 1847.

54. *Tracheotomy in Croup*.—M. GUERSANT communicated to the *Société de Médecine Pratique*, (Jan. 7, 1847,) an account of an operation for tracheotomy, performed on a child 14 years of age, who had been labouring under croup for four or five days, and who was commencing to become asphyxiated. The patient recovered. M. G. stated that this was the fifth successful case out of forty-one, in which he had performed the operation for true croup.—*Gazette des Hôpitaux*, 23 Feb. 1847.

55. *Ascites cured by the Iodine Injection into the Peritoneal Cavity*.—M. LERICHE of Lyons, reports, in the *Journ. de Méd. de Lyons*, the following case:—

A girl, aged 17, of weak constitution, has regularly menstruated since the age of 14, and became affected in the month of January, 1846, with ascites, after a slight pulmonary affection. Diuretics and drastic medicines had been unsuccessfully resorted to. The circumference of the abdomen measured one mètre seven centimètres (three feet eight inches). On the 11th of March paracentesis was performed, and eleven quarts of fluid withdrawn. The following solution of iodine was injected immediately afterwards into the peritoneum: R.—Tinct. iod. ℥j; potassæ hydriod. ℥j; aquæ fontanæ ℥viii. Four ounces only of this solution returned after injection; the remainder was abandoned in the abdomen. The following night the patient complained of some slight pains and borborygmi. The urine was increased in abundance, and on the third day considerable flatulency was observed. Up to March 21, the nights were sleepless, the urine clear and abundant, and great weakness was present; but the strength and appetite returned from that day forward, the abdomen continuing to decrease in size, and a complete cure was finally obtained on March 30.—*Med. Times*, May 29th, 1847.

[May not this have been a case of encysted, or of extra-peritoneal dropsy?]

56. *Purulent Infection*.—M. SEDILLOT believes that authors have too generally regarded this affection as constantly fatal in consequence of their only taking into consideration extreme cases. He establishes a distinction between *purulent affection* and *metastatic abscesses*. As long as the disease is confined to the former condition, it may be cured; if there are abscesses only of small size, or few in number, all hope is not extinct; death only being inevitable when these are very numerous or large, or open into the pleura, the articulations, &c. The effects vary much, also, not only according to the quantity of pus mingled with the blood,

but also according to its qualities—the pus from a phlegmon producing much less deleterious effect than a sanious pus. Wounds of the perineum, in which there is a mixture of pus and urine, produce, even when the suppuration is not very abundant, fatal effects in a very brief space of time. It may be replied to the statement that the less advanced cases of purulent affection recover, that such were not examples of the disease at all; but M. Sedillot believes the pathological changes induced in man and animals from this cause are the same, and numerous experiments upon these last have proved to him—1. That a small quantity of pus injected into the veins only produces slight effects. 2. If the injection be repeated for several successive days, thirst, shivering, &c., are produced; but the animal continues to live if they are then discontinued—so that we must kill it in order to observe the pathological alterations at this period, such as patches in the lungs, emphysema, &c. 3. If a new portion of pus be daily injected, death takes place, always producing the same changes.

The lungs are the organs in which pus is found to be most frequently deposited in this affection; then follow the pleuræ, the joints, the liver, and the muscles. Although veins are constantly found leading from the source of pus, in a great number of cases no trace of *phlebitis* is visible. After amputations, in deep-seated phlegmons, in chronic suppuration, caries, &c., it is always by means of the divided or eroded veins that a direct communication between the purulent centre and the circulation is established, and the mixture of pus with blood which this gives rise to is one of the best ascertained phenomena of the disease. The constant obliteration of the veins by coagula, even in the cases in which they are inflamed, is contrary to the statement of most authors, an exceptional occurrence. The coagulum, when it exists, does not adhere to the walls of the vein, but floats in the pus, having an elongated, fusiform, shape. If it is interrupted from place to place, the blood remains fluid in the intervals, having lost its red colour, and become converted into a sanies by admixture with pus.

Recognizing different stages of this affection, and its curability in some of these, M. Sedillot enumerates the following indications of treatment. 1. Combating the inflammatory symptoms, if intense, by bleeding, especially local. 2. Modifying the surface secreting the pus, in the case of a wound. This is to be done by stimulant lotions or baths, or injections of aromatic wine. In this way the vitality of the tissues becomes modified, and the pus changed in qualities, or its secretion arrested. 3. Furnishing ample exit for pus by prompt incisions if necessary. 4. The frequent renewal of dressings. 5. The use of the actual cautery. This is often very efficacious. 6. If purulent infection seems threatened after attempting union by the first intention, the commencing cicatrix is to be broken, and the edges of the solution of continuity irritated. 7. A revulsive action of the secretory organs is to be maintained, especially by the use of purgatives. 8. Cold fluids should be drank in abundance, to maintain the venous system in a state of repletion, and diminish its absorbing powers as much as possible. 9. Counter-irritants should be applied in the vicinity of any organs suffering from derangement of function. 10. Tonics are not indicated until the febrile action has declined, and true prostration set in. 11. In the case of symptoms of infection occurring in a carious limb, amputation offers the best resource if its performance be not too long delayed.—*Med. Chirurg. Rev.*, July 1847, from *Recueil de Mém. de Méd., de Chirurg., et de Pharm. Militaires*, vol. lxii.

OPHTHALMOLOGY.

57. *Treatment of Scrofulous Inflammation of the Eye*.—Prof. JACOB, of Dublin, is publishing in the *Dublin Medical Press*, a series of extremely interesting papers on diseases of the eye. In one of these we find the following judicious remarks on the treatment of scrofulous ophthalmia.

“In providing for the treatment of an attack of inflammation of the eyeball in a truly scrofulous subject, the practitioner has to consider carefully, the probable effect of the remedies he usually employs in ordinary cases, when applied to this form of disease. When alluding to the treatment of simple, uncomplicated, or

idiopathic inflammation of the eyeball, I suggested the necessity of reconsidering the opinions generally entertained respecting the beneficial influence of depletion; in treating of inflammation modified by a scrofulous diathesis, or even by that languid or defective condition of the nutritive functions which is often assumed to be scrofulous, or perhaps equivalent to it, I have here to suggest a similar or even a greater degree of caution. A patient presenting all the constitutional marks of scrofula, but otherwise in vigorous health, may be, and often is, benefited by local or even sometimes by general bleeding, but such a subject may also suffer from it, if it has not the effect of arresting the inflammatory action. The sudden abstraction of blood, by weakening the heart's action and diminishing the activity of the capillary circulation, will often cause local inflammation to abate or even to cease altogether; but if it has not this effect, it often contributes to produce that state of the system which leads to the effusion or deposition of serum, pus, or lymph, or even of the peculiar material called tubercular; and more frequently in scrofulous than healthy subjects. In such subjects, also, bleeding appears to have less effect in causing the inflammation to abate or cease than in those not so affected, and this is, I think, especially to be observed when bleeding is resorted to after the inflammation has existed for some time, and has been thoroughly established. Bleeding should, therefore, if resorted to at all in this form of inflammation of the eye, be resorted to at the earliest period, and with the view of suddenly weakening the heart's action, and thereby diminishing the activity of the capillaries, rather than for the purpose of suspending nutrition, or interrupting the salutary and ordinary functions of the circulating organs. The local abstraction of blood by leeches or cupping, be its effect on the disease what it may, probably exercises less prejudicial influence on the constitution than general bleeding, and may, therefore, be adopted with less risk of bad consequences; but in neither form is this resource, according to my experience, to be relied on to arrest inflammation in scrofulous as in healthy constitutions.

"The practice so generally pursued of suspending the processes of growth and nutrition, by denial of the usual quantity of food of proper quality, to arrest inflammatory action, also requires reconsideration when it comes to be applied in scrofulous subjects more particularly. It should be recollected, that persons cannot continue to live without a renewal of the blood circulating in their vessels; and it is obvious that such renewal can be effected only by the administration of food capable of affording such blood. A sufficient supply of the ingredients necessary to sustain life, is also required to maintain a healthy state of the system, and without such healthy state of the system, inflammatory action cannot be controlled or prevented from proceeding to the extent of effecting destructive changes of organization. Acting on these principles, the practitioner should not, in scrofulous subjects at least, interdict for any length of time, the use of nutritious food in sufficient quantity to supply the incessant expenditure of its elements by secretion and excretion. I do not mean to say that either in quantity or quality the diet should be as generous as in a state of health, but the sudden and total discontinuance of animal and vegetable materials necessary to sustain life or preserve health, and the substitution of those incapable of doing so, such as are commonly called slops, should not be permitted. The peculiar character of inflammation in scrofulous subjects, is its not yielding in a short time, or in a distinct way, either spontaneously or to remedies, but rather gradually diminishing in intensity, or becoming less active; in other words, not terminating so often in what is called resolution, but becoming chronic: we should, therefore, be prepared to encounter a protracted state of disease, and to provide for its consequences by sustaining the strength and health of the patient. With this view, animal food should not be interdicted, as it generally is, from a prevalent belief that it induces a predisposition to inflammation, or when it takes place exasperates it. Animal food should not be given, especially at the commencement, in such quantity as to risk even a temporary increase in the quantity of the circulating fluids, and thereby to induce increased action of the heart, and corresponding activity of the capillary currents; in other words, the patient should not be allowed to make what is called a hearty meal, but he should have as much nutritious food as will secure the supply of the necessary quantity of blood of good quality to his system. Sudden and extensive change of diet should be avoided for another reason. The stomach and alimentary canal

may have their ordinary functions disturbed or interrupted by the discontinuance of the usual digestible food, and the substitution of new and less agreeable aliments, and experience has fully proved that nothing contributes more to the destructive progress of inflammatory action than such disturbance. This, however, is a subject upon which I cannot venture to enlarge here, because it involves the whole question of diet and nutrition in relation to scrofulous disease generally; but I am induced to dwell so far upon it, because I so often see the evil effects of undue depletion and defective nutrition in scrofulous inflammation of the eye, and observe so frequently the reliance placed on medicinal remedies in its treatment, regardless of this most important means of arresting its progress, and rendering its consequences less destructive. It should be understood, that these observations are applicable to the treatment of all forms of inflammation of the eyeball, although I have reserved them for the present occasion, because it is in the scrofulous form of disease, the necessity of attention to the digestive absorbent and nutritive functions becomes more urgent.

"The practitioner should not confine his attention to diet alone, in providing for the improvement of his patient's constitution by means not merely medicinal. Respiration of pure air frequently changed, the maintenance of the necessary amount of animal heat, and exposure to sufficient light, should not be neglected or forgotten. It is not only in the close, crowded, and uncleanly dwellings of the poor, that attention to respiration of pure air is demanded; the sleeping-rooms and nurseries of affluent persons frequently require as much care, badly constructed as they generally are, for the attainment of this object, and encumbered, as we frequently find them, with window and bed curtains, carpets, and unnecessary furniture. A volume might be written on the ventilation of sleeping apartments, and on the contrivances which might be adopted to correct the defects of construction in our houses which render a free circulation of pure air impossible, the measures to be pursued with the same view in the crowded rooms of the poor in large towns, or their cottages in the country, would require an equal amount of space for their suggestion. I can, therefore, do no more here than direct the attention of the practitioner to the subject, and leave it to his judgment and opportunities to apply a remedy. The maintenance of a salutary amount of heat in the system, especially in young persons, requires attention, also, difficult as it often is, to secure it, in consequence of the direction of the currents of air flowing from the doors and windows to the fireplace. A temporary screen with the necessary clothing and bed-covering, and in winter, a fire of sufficient strength, will enable the attendants to effect this object. The exclusion of light, or immuring the patient in total darkness, is generally considered an essential part of the treatment in all inflammations of the eye, yet I am convinced that the practice is founded on erroneous views. It appears to be assumed that light must necessarily cause pain, and consequently irritation, if admitted into an inflamed eye, but this is a mistake. Light, it is true, often does produce this effect, especially in the advanced stage of disease, and in peculiar forms of it, but as often do we find no inconvenience experienced by its presence. I therefore do not exclude light by closing the shutters or drawing the curtains, but merely as a precaution let down the sun-blind, or I direct the patient to sit with the back to the window or candle, as long as no complaint is made of pain from exposure; being convinced that in the majority of cases, distressing intolerance of light is induced by rendering the eye more sensitive to it by the use of shades and curtains. These observations respecting diet and general management, are more applicable to what is called the after-treatment, than to the first attempts to arrest inflammation, but I have made them here because I so often see the evil consequences of a disregard of such means followed by the worst consequences. The rule from the very commencement should be to avoid, as much as possible, making the patient an invalid, and in all cases where the practitioner can venture to do so, he should treat the patient without confinement to bed or bed-room, and even, if the weather be fine, allow exercise out of doors in shaded situations. The principles which I thus suggest to be applied in the treatment of scrofulous inflammation of the eye, have been advocated by writers on disease of this nature, both ancient and modern, and are therefore not advanced as original. Mr. Carmichael long ago inculcated similar doctrines in his essay on the Nature of Scrofula.

"While treating of the other forms of inflammation of the eyeball, I entered at such length into inquiries respecting the value of the various remedies proposed for its relief, that it is unnecessary to reconsider them here in detail. Antimonials, mercury, iodine, turpentine, iron, cinchona, sarsaparilla, guaiacum, and even colchicum, may, I conclude, be made as available, with the necessary limitations which circumstances demand, in scrofulous, as in the idiopathic, syphilitic, or rheumatic species. It is necessary, however, to suggest some modifications of these agents, to adapt them to the treatment of this form of disease. In a well-marked acute attack of iritis, or inflammation of the eyeball, occurring in a scrofulous subject, mercury must be given as under similar circumstances in other varieties, but the practitioner should not forget that he has to deal with a constitution which will not ultimately bear with impunity the effects of this remedy, as well as the ordinary or healthy one; and also, that in such a state of constitution, the beneficial effects of a full and free course of mercury, are not so apparent or decisive as in a sounder state of the system. The medicine should be more slowly and cautiously introduced, unaccompanied by that debilitating treatment so often adopted in other cases, and it may even be given in combination with tonics and during the use of nutritious food. The preparation to be used requires consideration. The blue pill, with or without opium, as the state of the bowels demands, will generally prove sufficient, and in less acute cases, the compound calomel pill, commonly called Plummer's pill, may be found preferable. Corrosive sublimate (the muriate or bichloride of mercury), has been much extolled, and I believe, extensively employed in this city, in the more chronic or protracted forms of inflammation both of the eye and conjunctiva, but as the advocates of it generally direct it to be dissolved in tincture of cinchona, by which it is of course decomposed, no evidence of its superiority is afforded. The value of iodine as a remedy in inflammation of the eyeball, has been considered when treating of the other forms of this disease. It is, however, in scrofulous inflammation, that its influence should be more relied on, if confidence is to be reposed in the opinion entertained respecting its virtues in this disease generally. I do not think that a practitioner would be justified in relying on iodine in any form, as a means of arresting in its first stage, acute inflammation of the eyeball, caused or modified by scrofula, but I think he may place reliance in it as an aid in the more advanced stages of the disease, either in combination with or following mercury. In cases of this kind, the plan I pursue is to give mercury in moderation, until it begins to produce its usual effects, and then to commence with the iodide of potassium. Five grains of the *pilula hydrargyri* is given three times a day, until the gums become affected, and then continued in five-grain doses at night only, giving from five to ten grains of the iodide of potassium, in the morning and middle of the day. After this has been persevered in until the mercury has had a fair trial, the pill at night is discontinued, and the iodide substituted for it, either alone or in decoction of bark, if the stage of the disease, and the state of the constitution demands it; or the iodide of iron in syrup, in the dose of three or four grains daily is given. In those cases in which the inflammation is a repetition of former attacks, or a relapse, or where it has become refractory or chronic, mercury having been freely and repeatedly used before, the iodide of potassium, or iodide of iron affords an obvious resource, and under such circumstances I have seen it, I think, effect as much as could be expected from any other remedy.

"In the more advanced stages of the disease, or even at an earlier period, if it does not yield to the remedies above enumerated, tonics and nutritious food, removal to a more healthy locality, and every other means usually resorted to in scrofulous affections, must be adopted. Cinchona or other vegetable tonics, in such form as the practitioner may consider best suited to each individual case, may be employed with advantage; and iron, either alone or in combination with other remedies, should have a trial. Patients residing in large towns should be removed to the country, and even from one locality to another differently situated. As to local treatment, little remains to be added to the observations already made under this head, in treating of the other species of inflammation, except enjoining more caution as to the application of blisters, which in scrofulous subjects so often are the cause of enlargement of the cervical glands."

58. *Malignant Disease of the Eye*.—Dr. DALRYMPLE showed to the Pathological Society of London, March 15th, 1847, a series of preparations (accompanied with drawings), of the various forms of Malignant Diseases of the Eye, in order to prove the futility of operative interference in any stage of such affections. The result of extended experience had convinced him, that where the globe had been extirpated at the earliest possible stage of the disease, the death of the patient was brought about, sooner or later, by the formation of secondary tumours in the brain, in the same manner as when the globe had been extirpated at a more remote period of the disease. The particulars of several of the specimens were detailed at length, proving the above assertion; and the following case, Mr. Dalrymple observed, might be considered a type of the average course of the disease:—

A child, two or three years old, came under his care in the beginning of the year, some time back. At the back part of the eye were observed three small deposits of fibrin, leaving a triangular space of the choroid between them. These gradually extended forward to the ciliary boundary of the choroid, and became vascular, pushing the iris forward into the anterior chamber. They became gradually more and more vascular, the triangular space between them gradually diminishing. In proportion to their increase, the iris became more prominent, and by degrees vascular. In May, the globe was hard, sclerotic, bluish, iris more convex.—August: globe enlarged, iris narrower, lens in a state of incipient opacity, lids of a purplish hue, pain in the globe.—September: eye enlarged, pupil large, lids livid and swollen, palpebræ cannot be closed: deep-seated scleritis, dark blue zone near attachment of cornea, fungoid mass in the anterior chamber, with effusion of lymph; headache.—December: globe gave way, conjunctiva crimson and velvety, slight bleeding, headache, and pain over brow.—January: Tumour equalled size of apple, covered with dark crust: drowsiness, emaciation.—March: Tumour much enlarged.—On the 25th: Stupor, convulsions, death.

On the post-mortem examination, small tumours were observed, connected with the bone under the scalp. Dura mater opposite the tumours, soft and thick, as also arachnoid. Ventricles contained one ounce of clear fluid; a large encephaloid tumour at base of brain, limited by the olfactory nerves; the pons Varolii, and the sides of the middle lobes, involving the right optic nerve, the third pair, however, being but little interfered with. Sclerotic crushed and emptied of its contents, the cavity of the eye being filled by a reddish medullary growth, traced from where the optic nerve entered. Muscles and lachrymal gland unaffected.

Another reason contra-indicating the removal of the globe, remarked Mr. Dalrymple, is the occasional existence of a disease of the eye, in no way distinguishable, as regards physical appearance, from the first stage of malignant disease. The disease consists in the effusion of an albuminous fluid between the retina and choroid, causing protrusion of the lens, and giving rise to the cat's eye appearance. In the two specimens which were exhibited as illustrative of this affection—in the one, there was mere serous effusion; in the other, serous effusion, accompanied with the deposit of flocculent tripe-like looking lymph, on the external surface of the retina.—*Lancet*, March 27, 1847.

59. *Case of Encephaloid Disease of the Brain, inducing Amaurosis*.—Mr. J. DALRYMPLE communicated to the *Royal Med. and Chirurg. Soc.*, May 11th, the following case of this character. Miss B., about twenty-eight years of age, had been totally blind about four years; but the ocular symptoms date nearly a twelve-month previous, commencing with dimness of vision in one eye, and gradually involving both in total darkness. There were no morbid appearances in either eye, and with the exception of the iris being sluggish, there was little to indicate the extent to which the blindness had proceeded, for the pupils were never much dilated, and never wholly lost the power of contraction. About the time Mr. Dalrymple first saw the case, there were obscure symptoms of some disease of the brain, severe pains at the back of the head, some partial numbness of one side of the face, and occasional jerking of the muscles of the right arm and leg. These symptoms entirely disappeared under a full course of mercury, and never returned in any noticeable degree. The blindness, however, continued. By careful dietetic and hygienic treatment Miss B. enjoyed good health, only

complaining of occasional vertigo, and subject to frequent attacks of "faintishness," which occurred at irregular intervals, and lasted but for a few minutes. In the first week of Feb. 1847, this lady died suddenly, with little or no premonitory symptom or illness. On examination of the body the day after death, a large encephaloid tumour was found at the base of the brain, involving the chiasma of the optic nerves, and extending back as far as the pons Varolii; then entered the middle lobe of the brain, as high as the level of the lateral ventricle, on the right side, which it compressed, and nearly obliterated. The left side of the brain was healthy. The third nerve, on the right side, passed through the tumour; and the fifth nerve on that side was partially overlapped by it. No other nerves suffered by its pressure. This lady had an attack of measles three years previous to the development of any ocular symptoms. This attack was very severe, accompanied by delirium, strabismus, and dimness of vision; and although it was supposed she had entirely recovered from this illness, the author of this paper surmises the origin of the encephaloid disease may be referred to the cerebral inflammation which occurred at that time.—*Lancet*, June 5th.

60. *Structure of Conjunctiva*.—According to ARLT, who has recently examined the minute anatomy of the conjunctiva in its healthy and diseased state, the transparent portion of this membrane which is extended over the cornea, is composed entirely of layers of pavement-epithelium; no fibro-cellular tissue being discoverable in its structure except at the very borders of the cornea. At these parts the arrangement of the fibro-cellular tissue is such that the simply epithelial portion of the conjunctiva is not round, but has a transversely oval form. In the eyes of old persons, however, and in those of individuals who have suffered much from congestive or inflammatory affections of the conjunctiva, fibro-cellular tissue is frequently developed in the simply epithelial structure covering the cornea; and the result of this is the more or less opaque grayish-white aspect, which the eyes of such persons are apt to present.—*London Med. Gaz.*, August 1847, from *Schmidt's Jahrbücher*, 1847.

MIDWIFERY.

61. *Case of Delivery without operative aid, through a pelvis extremely deformed by Malacosteon*.—Professor SIMPSON, of Edinburgh, relates, in the *Monthly Journal of Medical Science*, July, 1847, a case which is probably unique in the annals of Midwifery, in which a child at the ninth month of utero-gestation, was delivered through a pelvis under one inch in its narrow, and two and a half in its long diameter, without operative aid. The subject of this case, Mrs. D., was 34 years of age, and had been married ten years. Two years subsequent to her marriage, (1837) she was attacked with pains in the back and sides, and stiffness about the ankle-joints, from which she never entirely recovered, so as to be able to walk without support. In 1840 she fell, while walking with a staff across her room, and after this, the pains in the limbs were, for a considerable time, far more severe, and the lameness greatly increased. Since recovering she has been able to walk out of doors with the assistance of crutches. But various bones of the trunk and extremities have become shortened and deformed under the effects of the malacosteon. The spine is bent backwards and outwards in the form of a bow, with the ribs and sternum correspondingly displaced. Some of the phalanges of the fingers are bent: the right thigh bone is curved forward into a semicircular shape. And from being a handsome and somewhat tall woman, she has shrunk down, during the course of the last seven or eight years, into a deformed, dwarf-like figure, measuring about four feet in height.

She never had become pregnant until June, 1846, and she did not at this time become aware of her pregnancy, until it was far advanced. She then applied to Mr. Wiseman of Cupar, who, on examining into the condition of her pelvis, at once found that its outlet was extremely contracted, but the pregnancy was already so far advanced as to preclude, under such a degree of deformity, the idea of delivery by the induction of abortion or premature labour. Besides, all attempts to

touch the os uteri proved ineffectual, so that none of the ordinary means of arresting pregnancy, and exciting uterine action, could have been put into practice.

Early in March, Prof. Simpson saw her with Mr. Wiseman. "She was quite incapable," he states, "of moving or turning in bed without assistance. The uterine tumour was high, and pressed over to the right side. On applying my stethoscope to it, I readily detected the usual rapid pulsations of the fetal heart. I found fully borne out the correct description which had been previously given me of the excessive deformity and contraction of the pelvis. The sacrum was straight above, so that its promontory did not, probably, encroach on the brim; but its inferior extremity was strongly and abnormally curved forwards. In front, the walls of the pelvis felt doubled or collapsed together: and the outlet, which was the only part that could be very accurately examined, was exceedingly deformed, and diminished in size. The transverse diameter was particularly contracted. I found it impossible to introduce two fingers between the tuberosities of the ischia. Hence, this diameter of the outlet was evidently under an inch. Posteriorly, or opposite the sacro-sciatic ligaments, there was transversely more space, but the strong anterior curvature of the coccyx and lower end of the sacrum seemed to curtail the conjugate diameter of the opening, and to prevent the probability of its admitting, when fully dilated, more than three, or, at most, four fingers even in this direction.

"Under these circumstances, with a living child advanced to the eighth month, and a pelvic outlet so extremely contracted, I had no hesitation in coming to the same conclusion as the patient's medical advisers had all previously done,—namely, that the Cæsarean section was the only practicable mode of delivery."

On the morning of the 28th April, Prof. S. received from Mr. Wiseman a note, dated the previous night, intimating "that our patient had begun to complain of labour pains—that the os uteri could be felt projected low down into the vagina—that it was not opened more than two or three lines—and that the presenting part of the child could not yet be detected." "Along with some professional friends who had agreed to accompany me, I forthwith proceeded to Cupar, a distance of about thirty miles. On arriving there, we were surprised to hear that the patient was delivered, and our surprise was only increased by learning that no kind of instrumental aid had been required. A visit, however, to the room in which the child was, readily solved the apparent riddle.

"The infant had been dead for some time *in utero*. It looked nearly the natural length, and as it lay extended on the table, it measured $18\frac{1}{2}$ inches from the crown of the head to the heels. But its limbs and body were thin, lank, and atrophied; and its weight was only 3 pounds 2 ounces. Its head appeared very large and disproportionate in size, and, indeed, had been considered hydrocephalic. This seeming increased volume, however, was not the consequence of effusion, but the result of putrefaction. The encephalon was in a dissolved and semi-fluid state; and as the head lay on the table, it was extended and flattened out laterally and superiorly, as if it consisted of a bag or bladder, half-filled with liquid or semi-liquid contents; and such, in fact, it really was. For all the bones of the arch of the cranium were separated from their attachments, and floated about in the dissolved and liquefied cerebral matter. The bones of the basis of the skull were also loosened, and more or less separated from each other—a rarer occurrence. On handling the vertex, the first piece of bone which I touched was the orbital portion of one of the ossa frontis. The symphyses, even of the inferior as well as of the superior maxillary bones, were loosened, and admitted of free motion. And the component parts of the head and face were so easily displaced and compressed that, on placing one of my fingers in the lower occipital region behind, and another on the nose or cheek in front, I found that, without any considerable degree of exertion, the two could be made to approximate to within a few lines of each other. Yet the skin of the scalp and face was continuous and entire, the epidermis only being separated at different parts. The chest and abdomen of the child seemed quite soft and pliable, though not in so disintegrated a state as the head.

"Thus far the putrid and diffuent state of the fœtus appeared to afford an easy explanation of the possibility of its transit through the very contracted pelvic outlet of the mother. But I was anxious to have more full and complete proof that the fœtus, even in this state, was capable of passing through an aperture of di-

mensions so small as we knew the pelvis to present in the case of Mrs. D. In order to obtain this proof I got oblong openings of two or three different sizes, cut in plates of white iron. The smallest of these perforations, however, though only $3\frac{1}{2}$ inches long by $\frac{7}{8}$ broad, proved unnecessarily large for the experiment. We diminished it by filling it up at one end with strong, thick, and perfectly unyielding sole leather, so that the whole opening measured only $2\frac{3}{8}$ inches in its largest, by $\frac{7}{8}$ of an inch in its shortest diameter; and yet through this aperture the child was pulled without any great degree of force or difficulty. In dragging the infant through this aperture, no particular resistance was met with from the bones of the head and face; but the size of the liver impeded its transit for a minute or two, as the lower part of the thorax was passing through the metallic opening. Dr. Graham, Dr. Ziegler, Dr. Weir, Mr. Wiseman, &c., witnessed these experiments with me; and, if our limited time had allowed us to remain longer in Cupar, and to have got another plate perforated, probably we would have found the child capable of passing through an aperture one or two lines smaller in some of its dimensions.

"The placenta had been preserved. It was small and atrophic, and contained, scattered through it, a number of those white tubercles (as they are sometimes improperly termed), which we so often see connected with, and causing marasmus and death of the fœtus in utero. Some of these tubercles or fibrinous deposits were of the size of hazel-nuts, or larger.

"The history of the delivery had been this. Slight labour pains had come on during the afternoon of the 27th. She was seen in the course of the evening by Drs. Graham and Grace, and Mr. Wiseman, who found the os uteri beginning to dilate, but the pains were not severe, and the husband and attendants of Mrs. D. all went to bed. About one o'clock in the morning of the 28th, Mr. Wiseman was raised, the waters having broken about an hour previously, and the uterine contractions having become strong and bearing down. When Mr. Wiseman reached the house of the patient, he found the soft scalp of the child already bulging through the external parts. Some detached bones, included in the portion of scalp that had passed, allowed him to obtain a firm hold of the protruded portion of the head, and thus enabled him to use some extractive force. By thus assisting the effects of the pains, the child was entirely born about half an hour after Mr. Wiseman's arrival. The mother has made a very good recovery, and declares that 'having a child is nothing.'

"There are no sufficient data to determine at what precise time the infant died. Milk had been discharging from the nipples for three or four weeks before delivery; but whether the child had perished about that period it is impossible to say. Mrs. D. deceived herself with the idea that she felt it living and moving, up to the time of delivery."

Prof. Simpson offers the following inferences which the history and details of this case suggest to him.

"1. It has taught me," he says, "and is, I conceive, calculated to teach others, a strong lesson of caution in regard to our *prognosis*, under apparently even the most desperate circumstances. In such rare forms of complication as this, we must depend for our prognosis, &c., upon the anterior observations and recorded facts of others. Here, all such records led me to expect a very different result, and offered no hope whatever of such a fortunate termination as actually occurred.

"2. The case affords a new and striking illustration of the just and well-known remark of Dr. Denman, that 'the resources of nature in everything which relates to parturition are infinite, and constantly exerted for the preservation of both the parent and child; yet when the two objects are incompatible, the life of the child is almost uniformly yielded to that of the parent.*' And the mode and mechanism by which nature brought about this unexpected result in the present instance, are highly worthy of special notice. For, *first*, she set up a diseased condition of the placenta, which prevented the full and proper nourishment of the fœtus, and thus restrained, as far as possible, its development and growth. *Secondly*, she carried this state of marasmus to such a degree, as at last proved slowly fatal to the child, without superinducing that expulsive action which generally soon fol-

* Practice of Midwifery, p. 415.

lows the death of the infant. *Thirdly*, the dead infant was subsequently retained for so long a time in utero, that not only the bones of the cranium, but the bones of the basis of the skull and face were loosened and separated from each other, and the head and other parts of the body thus rendered readily and easily compressible.* And, *lastly*, the emaciated, dead, and highly putrefied infant, after being thus reduced to this diffuent and compressible mass, and now capable of being moulded to the contracted apertures of the pelvis, is ultimately and without difficulty expelled through them by the supervention of natural uterine contractions. Each stage and step in this mechanism was necessary for the success of that which followed it, and the imperfection or omission of any one of them, would probably have entirely subverted and prevented the very fortunate and very unlooked-for result that occurred from the combination of the whole.

"3. Does the mode in which the delivery was effected in this instance by nature, suggest any measures of practice which, under similar complications, we could induce and imitate by art? I put this question, because, in the greater deformities of the pelvis, all the standard operations and means which we employ for delivery, are, in fact, imitations of processes and operations which nature herself employs under the same conditions. When the pelvis has been much contracted, abortion has occasionally come on in the earlier months and saved the mother; or premature labour has supervened about the seventh month, and saved both the parent and child. These natural processes we imitate successfully, in the artificial induction of abortion and premature labour. If, in morbid contraction and deformity of the pelvis, the pregnancy goes on to the full time, nature is still sometimes capable of delivering the mother by other and various measures. Occasionally, during labour, the symphysis pubis has been rent asunder under the intense and wedge-like pressure of the infant's head; or the uterus has lacerated,

* No individual case in midwifery has given rise to so much discussion, as that of Elizabeth Sherwood. Her pelvis was estimated by Dr. Osborne as below the lowest standard which I have given in a preceding page, as capable of allowing of the passage of a child by embryulso, being only about $\frac{1}{4}$ of an inch from the sacrum to the pubis; and yet he delivered her successfully by craniotomy, after working and pulling for three hours with the crotchet. Many authors have stated that Dr. Osborne must have undoubtedly under-measured the pelvis of Sherwood;—and Drs. Hull, Burns, Hamilton, &c., have denounced the operation of embryulso as "impracticable," if Dr. Osborne's measurements were at all true and accurate. Dr. Campbell, for instance, observes: "It would be idle to enter largely on the refutation of this extraordinary case, since Dr. Osborne's narrative of what he thought he had accomplished, is irreconcilable with common sense; for how could the base of the cranium, which is $1\frac{1}{2}$ inches in thickness, and nearly three in breadth, be brought through the aperture which he describes. A fair estimate" (Dr. Campbell continues), "of the utter impossibility of effecting it, may be afforded by the simple experiment of forming in a plate of hard wood, an opening in shape and size exactly corresponding to the pelvis of Sherwood, and attempting to force through it the base simply, divested of the other portions of the skull." (*Midwifery*, pages 317 and 318.) In the case of Mrs. D., I obtained the corroborative evidence afforded by the very experiment which Dr. Campbell here properly suggests; and I have already stated the facility with which the child was passed through the perforated plate. In Sherwood's case there was, I believe, the same reason for the practicability of delivery, for the fœtus seems to have been in the same putrid and decomposed state, as Mrs. D.'s child, and perhaps the bones of the face and basis of the cranium were in a similar way loosened and compressible. "The whole body of the fœtus was," to quote Dr. Osborne's own words, "in the most putrid and almost dissolved state." See p. 101 of his *Essays*.—But, besides, the brim of the pelvis in Sherwood was in reality not so small as the measurement of its conjugate diameter would seem to indicate. During delivery, the os uteri was pulled by Dr. Osborne over to the right side, or to the space intervening between the line of the conjugate diameter and the right ilium. Here there was an oblong aperture 3 inches long, (as measured from the ilium to the symphysis pubis,) and $1\frac{1}{2}$ inches broad; and hence, in fact, an aperture as great as Drs. Hamilton, Burns, Churchill, Ramsbotham, &c., deem necessary for the performance of embryulso; and greater than that through which we pulled Mrs. D.'s child.—See drawing of the brim of Sherwood's pelvis, in *Dr. Hull's Defence of the Cæsarean Section*. Pl. v., fig. 1.

or, as has happened now in two recorded cases, both the uterus and abdominal parietes have simultaneously ruptured and allowed of the escape of the child through this double opening; or the bones of the child's cranium have become deeply compressed and fractured, so as at last to allow the reduced head to pass; or the same has been effected by the infant dying, putrefying, and at last its scalp and sutures bursting, so as to produce the necessary diminution in the size and dimensions of the encephalon. These several operations of nature are all imitated by art, in the respective operations of symphyseotomy, the Cæsarean section, cephalotripsy, and craniotomy. And while art thus adopts the operative principles of nature, she attempts to improve both upon their facility and safety, by selecting an earlier, and hence less dangerous period for their performance; and by making the required openings and lesions by cutting instruments, instead of submitting to the chance of their being made by nature, by means, simply, of an enormous and hazardous expenditure of muscular effort and compression on her part.

"But, I repeat, does the mechanism of the delivery in Mrs. D.'s case, suggest any principles for imitation? Let us consider the answer, as it might be varied by the *date* of the pregnancy of the mother; and according as she had reached the periods, *first*, of artificial abortion; or, *secondly*, of premature labour; or, *thirdly*, had already advanced to the full time.

"The case shows, that through an opening of very small dimensions, a child may pass, provided it be in a very compressible state. So far it evidently suggests that the induction of *abortion* at the 4th or 5th month, when the head of the fœtus is still small, soft, and very easily reducible, would, as long ago proposed by Cooper, &c., succeed in such extreme deformities, in saving the mother from many of the dangers accompanying delivery at a later period of utero-gestation. I have stated above that Mrs. D. applied to Mr. Wiseman at a time when it was already considered too late to have recourse either to artificial abortion or premature labour; and further, the high position of the os would probably have rendered either of them impracticable.

"The induction of *premature labour* at or about the seventh month, would not, of course, have sufficed with a pelvis of such small dimensions, unless we could modify the operation so as both to produce the death of the child, and *retain* it in utero, to allow of its structures becoming dissolved and disintegrated before labour at last supervened. Now, we have no known means of inducing that diseased state of the placenta, which produced the attendant emaciation and death in the case of Mrs. D.'s infant; nor am I acquainted with any measures which would destroy the life of the child in the later months, without superinducing labour. The retention, however, in utero of the infant, and its putrefaction, would be as necessary for success, as its death, under such great degrees of contraction. And the result shows, that when the pelvis is much deformed, and labour with a *dead* child is threatened, or the infant is destroyed by craniotomy, the longer we can retain it in utero without danger to the mother, and the more it thus become putrefied and disintegrated, the easier will its ultimate expulsion or extraction prove.

"Lastly, suppose a patient with a very diminished and deformed pelvis, to have arrived at the *full time* of utero-gestation, does Mrs. D.'s case suggest any new principles or modifications of treatment for the delivery of the mother? I believe that, under these circumstances, our conduct and practice should be, in a great degree, regulated by the state of the child. If it be *alive*—as ascertained by auscultation, &c., and the pelvis is as small as in Mrs. D.'s case, or even half an inch larger in its measurements, then I am decidedly of opinion that it is our duty to perform the Cæsarean section. We have two human lives committed to our charge, and it is our duty to try to preserve both, provided we can attain that object without subjecting the mother to a degree of danger much greater than she would otherwise undergo. Let us take, however, the other alternative, and suppose the child already *dead*. With this complication, most British accoucheurs would attempt delivery by craniotomy, if the dimensions of the pelvis permitted at all of the possibility of it. And the case of Mrs. D. seems to me to suggest one means of rendering it thus possible, under states of contraction where it is, at present, properly regarded as in the highest degree unsafe or totally impracticable. The grand obstacle to the delivery of the child by embryulsio, in greatly contracted pelvis, arises from our want of means of reducing the size, or altering the

shape and compressibility of the bones of the base of the skull and face. In Mrs. D.'s child, nature had disintegrated and separated these bones, removed, in fact, this obstacle, and thus rendered the delivery not only possible but easy. Could we imitate or induce this same fortunate result by artificial means? All our present means of reducing the size of the fetal head in embryulso, are limited to the destruction of the arch of the skull. I am not aware that with any proposed form of osteotomist,* we are capable of cutting or disintegrating the base of the cranium or face, when the pelvis is diminished to $1\frac{3}{4}$ or $1\frac{1}{2}$ inches in its shortest diameter. Yet, probably, some modification of mechanical means would give us the power of effecting this desirable object. The common perforator might enable us to loosen and break up the bones of the basis in some cases, in the same way as with it we break up the arch of the skull. The disjunction or fracture of these bones, without their removal, might prove sufficient to permit the required degree of compressibility and alteration of shape. Or the common bone-forceps of the surgeon, or a modification of such powerful pliers as are used in dividing the needles in the operation of harelip, &c., might answer. At all events, the object seems anything but a hopeless one, more especially when we call to recollection that modern surgeons are now provided with mechanical means which sometimes enable them to seize, break up, and extract from the cavity of the bladder, large and solid stones,—and that, too, through a canal relatively so small and elongated as the male urethra.

62. *Nature of the Membrana Decidua.*—M. COSTE read a paper on this subject before the Academy of Sciences on the 24th of May last, in which, after alluding to the generally received theory—(viz., that the cavity of the uterus becomes, after impregnation, completely lined by a membranous decidua, thrown out from its mucous membrane; that the ovum, on arriving at the opening of the Fallopian tube into the uterine cavity, can only proceed in its course by pushing this first-formed membrane—the decidua vera—before it, and so inverting a portion of it, by which it will surround itself with another tunic, which, according to this view of its formation, is called decidua reflexa, the two retaining the ovum in its position, and holding between them hydroperic liquid,) he states that several facts for a long time led him to doubt the foregoing theory of the deciduas, but that he was disinclined to call it in question openly, until he had made such careful investigations as to convince himself of its error, and such as might lead him to the truth. With these objects, he has opened a great number of the bodies of women who have committed suicide, and after several years' experience, he believes he has collected such decisive observations on gestation in the human species, as to remove all doubts from any subject connected with it. He announces this present paper as the first of a series detailing the results of his researches. The present note conveys his views respecting the entry of the impregnated ovum into the uterus, and the formation of the decidual membranes.

“There is never produced normally in the womb of the human female, neither before nor during gestation, any false membrane, or hydroperic fluid, and, consequently, the deciduous membranes, as represented, are purely ideal.

“The ovum freely traverses the Fallopian tubes, and penetrates at once into the uterine cavity, and is brought into immediate contact with the hypertrophied

* The Kephelepsalis of Dr. Campbell appears to me to be an instrument preferable to, and more powerful than any of the forms of osteotomist invented by Dr. Davis or others. Yet, as we have already seen, Dr. Campbell believes embryulso to be impracticable, even with its assistance, in a pelvis less than 3 by 2 inches. It is almost unnecessary to add, that the French operation of Cephalotripsy, is founded on the idea of crushing and compressing the bones of the base as well as of the circle of the cranium. It is used by some of the leading accoucheurs of Paris, instead of craniotomy, particularly in cases where the child is dead, and the pelvis below the dimensions that would admit of the use of the forceps. But the instrument with which the operation is performed—the Cephalotribe, is of such enormous dimensions (its blades being of solid iron, $1\frac{1}{4}$ inch wide, the whole above two feet long and several pounds in weight), that it could not, of course, be applied in cases in which the pelvis was contracted to any extreme degree.

mucous membrane, depressing it at the point where the placenta is hereafter to be developed; and the mucous membrane itself, influenced by the action the ovum sets up in it, swells and rises as a prominent ring around it, or as a circular fold, which at length covers over and encloses it, constituting what has been named the decidua reflexa. As this coat, according to my observations, is a prolongation of the uterine mucous membrane, it has, at the first, the same structure as it. It is glandular and vascular in all its extent, like the mucous membrane. Later, however, all these traces of organization fade and disappear, but their existence may be very readily recognized in uteri during the first month of gestation. I have several specimens in my collection which leave no doubt on this matter. We may also remark, on the most prominent point of the reflected layer, a sort of cicatrix or umbilical depression, which indicates the spot where the circular fold of the uterine mucous membrane to envelop the ovum, was effected.

"This, then, in the human species, has no relation, except with the mucous membrane of the uterus; and when, in cases of abortion, or after parturition, the ovum is expelled, it is the exfoliated mucous membrane which it carries away with it. The results which I have just made known, differ so much from the views generally received, that I determined not to expose myself to their responsibility, until the facts had become irresistible. I now offer them confidently, and am persuaded that if no one as yet has been able to explain the problem, it has arisen from the difficulty of procuring wombs in an early stage after impregnation."

In conclusion, M. Coste observes, that he is not alone in his belief of the error of the present opinion respecting the early history of the ovum, since Dr. Sharpey too partakes in it; and that the latter has proposed two explanations, one of which may readily be reconciled with his own views.

At the séance following the one on which the preceding paper was read, a communication was received, calling attention to the fact that in M. Valentin's Report on the Progress of Physiology, it was mentioned that M. Pappenheim also was opposed to the received opinion regarding the ovum and its membranes.—*Lancet*, July 3, 1847.

63. *Prevention of Abortion.*—In the number of the *Dublin Quarterly Journal* for May last, Dr. GRIFFIN advances, in one of his "medical problems," the question whether, when miscarriage or premature labour takes place, at fixed periods, from the influence of an acquired habit, the periodical movements may not be prevented by such remedies as prevent the return of epileptic fits or agues? In answer to this query, he relates the case of a lady who had miscarried several times at the third month, and came under his care in her sixth pregnancy. Dr. Griffin could not detect any obvious cause of her former abortions, and as all other means had been tried, it occurred to him to try a course of some metallic tonic, given on the same principle as in epilepsy. She therefore took two grains and a half of oxide of zinc, with extract of hops, three times a day, followed by valerian, aromatic spirits of ammonia, and decoction of snake root. She was advised, instead of lying upon the sofa, to take the air as much as possible. Under this treatment she passed the usual period of miscarriage to her great joy. Happening, however, to meet soon after with causes of mental excitement, she experienced the premonitory symptoms of abortion to which she had been accustomed; but by taking a grain of opium every hour till the pain ceased, the accident was warded off, and she was soon able to resume the zinc. She went her full time. A second and still more striking case is also narrated.

64. *Spontaneous Evolution.*—Dr. KEILLER communicated to the Obstetrical Society, of Edinburgh, the following example of this. Dr. K. had seen the patient at the commencement of labour, but had left her in the hands of a midwife. When summoned again, the case had assumed the following aspect:—The liquor amnii for several hours discharged, a large swollen arm occupying the passages, the os uteri firmly grasping the obtruded shoulder of the child, and the uterine contractions unusually violent and continuous, a state of matters that had, in all probability, been encouraged, if not induced, by large doses of the ergot of rye, which

the "midwife" confessed had been administered for the purpose of bringing the case to a speedy termination.

Dr. K. failed in his repeated attempts to insinuate his hand into the uterus, in order to complete the delivery by the operation of turning; notwithstanding the free use of opium, the uterine contractions continued for some time excessively severe, when, during a violent pain, the arm was suddenly withdrawn from the passages, and the feet and body were almost simultaneously expelled, a rapid and complete evolution having spontaneously occurred. The child was of course dead. The mother made a good recovery.—*Monthly Journal of Med. Sci.*, July, 1847.

65. *Cases of Fatal Hemorrhage from the Umbilical Vessels in Infants.*—Dr. SIMPSON read to the Obstetrical Society of Edinburgh, a detailed account of two fatal cases of hemorrhage after separation of the cord. They occurred in India, in the practice of the late Dr. Christie, and were communicated to Dr. Simpson by Dr. Christie, of Dundee.—Both infants were of the same parents, who were quite healthy. The hemorrhage did not come on till some days after the cord had separated. The ordinary means for arresting hemorrhage by pressure, and various styptic substances were used, but only with very temporary benefit. Both children died on the eleventh day. In both instances there was a degree of jaundice. In the first case, the state of the vessels was not examined, but in the second the umbilical vessels were found to have their walls much thickened and indurated as far up as the liver.

Other cases were mentioned, and the transfixion of the bleeding part with a needle and including ligature (as in hare-lip), was described as the best plan of treatment.—*Ibid.*

66. *Fatal Hemorrhage from the Umbilical Cord three days after Birth.* Dr. KEILLER stated to the same society that he had been called upon to examine the subject of the following case of *fatal umbilical hemorrhage*, which recently occurred in the practice of a gentleman in town.

About half past one, P. M., on Tuesday, the 3d instant, Mrs. —, aged 29, was delivered of her third, a fine plump male child. The infant continued quite well until five o'clock, when it began to vomit a quantity of green bilious matter. On Thursday morning, however, the child was apparently well, being able to suck greedily, but again vomited towards the afternoon. About two, A. M., on Friday morning, the mother first discovered that the binder, &c., of the child were "soaked with blood from the navel." (She stated that she had changed the linens of the infant about twelve P. M., and did not then notice the existence of any bleeding.) The practitioner who delivered her was immediately sent for, but could not visit at the time; he, however, told the parties to apply a ligature below the one that was already around the cord, but they did not deem it their duty to interfere, "but preferred waiting until the gentleman could find it convenient to come and tie the cord himself," which was not until between four and five o'clock, when he visited and examined the bleeding point which was at the root of the cord, and applied to it the nitrate of silver, which seemed at the time to be sufficient to prevent the farther continuance of the hemorrhage. Before half an hour had elapsed, however, he was again summoned, when he tied a ligature around the umbilicus, embracing a portion of the skin which formed its circumference. This treatment, however proved too late; the child died in a very few minutes after the application of the ligature.—*Ibid.*

67. *Fungus, or Fungating Excrescences of the Umbilicus in Infants.*—Dr. SIMPSON stated to the Obstetrical Society of Edinburgh, that in infants, after the umbilical cord has dropped off, instead of the raw surface contracting and cicatrizing, he had several times seen large granulations appear, and a red, elevated, fungus-like excrescence form at the umbilicus, resembling the fungus testis of surgeons. These umbilical excrescences in general shrink and slough after a time, or do so on being touched with alum or other astringents, or with nitrate of silver. In one case which he had lately seen with Dr. Finlay, of Newhaven, this simple treatment had little or no effect. The excrescence enlarged to the size of a cherry, which it likewise resembled in colour. It was apparently insensible to touch, but blood oozed from its red surface under slight handling. It was cauterized several

times with nitrate of silver; but this did not cause it to shrink. At last, after several weeks, a ligature was passed round its base, and in a few days it had dropped off. It had not offered in any degree to return.

Dr. Weir stated that he had met with the same appearance in a family of four or five children. In all of them a similar, but smaller excrescence, formed on the umbilicus. They soon shrunk on being treated with powdered alum.—*Ibid.*

68. *Albuminuria in Pregnant Women.*—M. DEVILLIERS recently communicated to the Society of Medicine of Paris the results of the investigations which M. Regnault and himself have been engaged in making concerning the Albuminuria of Pregnancy. In this condition the affection presents much less distinct and well-defined symptoms, most of which may be readily confounded with those of other diseases of pregnancy. Sometimes no morbid phenomenon manifests itself; and at others there may be heaviness, headache, general uneasiness, some characteristic derangements of the digestive organs; but no febrile action belonging to this disease in particular. Lumbar pains are so common in pregnancy, that we are unable to distinguish them either by their seat or nature from those which are developed during the acute stage of albuminuria. As to the dropsy, sometimes it does not exist, which, however, is rarely the case; sometimes it is limited to the lower extremities, resembling the simple œdema of pregnant women; and sometimes it is general, and may be mistaken for anasarca dependent on affection of the heart, which, during gestation, is frequently increased to a great extent. There remains then the albuminous condition of the urine: and, notwithstanding what various writers have stated, these inquirers have never been enabled to detect albumen in the urine of the pregnant women who have been presented to their notice under ordinary circumstances. In examples of the disease the quantity of albumen has been found very variable, increasing sensibly during notable disturbance of the circulation, *e. g.*, during the development of intercurrent febrile affections, the period of accouchement, puerperal diseases, or the approach of death.

The affection which especially presents itself as a frequent and important complication of albuminuria is eclampsia. Most of the subjects of puerperal convulsions exhibit evident marks of serous infiltration. In some, however, this symptom is absent; but the authors of this memoir have *constantly* found albumen in their urine. Of course all the women exhibiting albumen do not become the subjects of convulsions; and the authors have found these absent eight times in twenty cases; but they believe that more than a mere coincidence exists between the two diseases, founding their opinion upon the fact, that in ordinary albuminuria various cerebral and nervous phenomena are exhibited, and that during pregnancy these last acquire a special development.

Contrary to what is observed in ordinary cases, the albuminuria of pregnancy may terminate in a rapid and complete cure after confinement, however grave the case may have appeared. It may pass into the chronic state, but this is more rare. It predisposes to the same affection in future pregnancies; it may induce abortion; seems to favour the development of puerperal diseases; and at the very least must be considered as a powerful predisposing cause of eclampsia; but of itself, and alone, it does not seem capable of inducing a fatal termination. The prognosis for mother and child is therefore only grave in proportion to the amount of complications. The authors observed 11 deaths in 20 albuminuric women.

Besides the various cadaveric lesions derived from the complications, the authors almost always found renal lesions of various kinds, and not exclusively such as are described as characteristic of Bright's disease; and they feel much disposed to accord to these organic lesions much less importance than is ordinarily attributed to them, and to regard them rather as the effects than the causes of the disease. Indeed, in pregnant women its causes seem to be different from those generally admitted in ordinary albuminuria.

The researches of the authors have proved to them that the blood of women during gestation exhibits a remarkable diminution of albumen, especially in the latter months; a condition which Andral has shown to be favourable to the production of dropsies in general, and one which bears the relation of cause to effect in respect to the present disease. The albumen dissolved in the blood is, in the normal state, combined in certain proportions, with a certain number of saline materials, which allow the blood to traverse the canalicules of the breast, to be

there submitted to depuration, without the transudation of a single trace of albumen; but if from any general cause, from a disturbed condition of the assimilatory powers, the static equilibrium is destroyed, the renal parenchyma may become traversed by anormal elements, and albuminuria induced.—*Med. Chirurg. Rev.*, July 1847, from *Revue Médicale*, vol. i., 1847.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

69. *New Test for Prussic Acid, and a simple method of preparing the Sulphocyanide of Ammonium.* By Prof. LIEBIG.—When some sulphuret of ammonium and caustic ammonia are added to a concentrated aqueous solution of prussic acid, and the mixture heated with the addition of pure flowers of sulphur, the prussic acid is converted in a few minutes into sulphocyanide of ammonium. This metamorphosis depends on the circumstance that, the higher sulphurets of ammonium are instantly deprived, by the cyanide of ammonium, of the excess of sulphur they contain above the mono-sulphuret; for instance, if a mixture of prussic acid and ammonia be added to the pentasulphuret of ammonium, the solution of which is of a deep yellow colour, and the whole gently heated, the sulphuret of ammonium is soon decoloured, and when the clear colourless liquid is evaporated, and the admixture of sulphuret of ammonium is expelled, a white saline mass is obtained, which dissolves entirely in alcohol. The solution yields on cooling, or evaporation, colourless crystals of pure sulphocyanide of ammonium. Only a small quantity of sulphuret of ammonium is requisite to convert, in the presence of an excess of sulphur, unlimited quantities of cyanide of ammonium into sulphocyanide, because the sulphuret of ammonium, when reduced to the state of monosulphuret, constantly reacquires its power of dissolving sulphur, and transferring it to the cyanide of ammonium. The following proportion will be found to be advantageous. Two ounces of solution of caustic ammonia, of 0.95 specific gravity, are saturated with sulphuretted hydrogen gas; the hydrosulphate of ammonia thus obtained, is mixed with six ounces of the same solution of ammonia, and to this mixture, two ounces of flowers of sulphur are added; and then the product resulting from the distillation of six ounces of prussiate of potash, three ounces of the hydrate of sulphuric acid, and eighteen ounces of water. This mixture is digested in the water bath, until the sulphur is seen to be no longer altered, and the liquid has assumed a yellow colour. It is then heated to boiling, and kept at this temperature, until the sulphuret of ammonium has been expelled, and the liquid has again become colourless. The deposited, or excess of sulphur is now removed by filtration, and the liquid evaporated to crystallization. In this way, from three and a third to three and a half ounces of dazzling white, dry sulphocyanide of ammonium are obtained, which may be employed as a reagent, and for the same purposes as the sulphocyanide of potassium. Of the two ounces of sulphur added, half an ounce is left undissolved.

The behaviour of the higher sulphurets of ammonium towards prussic acid furnishes an admirable test for this acid. A couple of drops of a prussic acid which has been diluted with so much water, that it no longer gives any certain reaction with salts of iron, by the formation of prussian blue, when mixed with a drop of the sulphuret of ammonium, and heated upon a watch-glass, until the mixture is become colourless, yields a liquid containing sulphocyanide of ammonium, which produces with persalts of iron, a very deep blood-red colour, and with persalts of copper, in the presence of sulphurous acid, a perceptible white precipitate of the sulphocyanide of copper.—*Liebig's Annalen*, Lond. Ed. and Dub. *Phil. Mag.*, August, 1847.

T. R. B.

70. *On the two varieties of Arsenious Acid.* By M. Bussy.—The author first gives a new process for determining the quantity of arsenious acid. This process is based on the employment of standard reagents. The reagent which he uses is permanganate of potash, which M. Marguerite has already successfully employed for the quantitative determination of iron.

When a solution of permanganate of potash is poured into a solution of arseni-

ous acid, it becomes arsenic acid, and the red colour of the reagent disappears. The liquor begins to become coloured, only, when the transformation of arsenious acid is complete. When, then, a standard solution of permanganate of potash is prepared, the quantity of arsenious acid contained in any solution, may be determined by that of the permanganate required to convert it into arsenic acid.

M. Bussy states that the two varieties of arsenious acid, the vitreous and opaque, absorb the same quantity of permanganate, and consequently that the differences observed in their solubility, is not derived from any difference of oxidation.

With respect to the solubility of the two varieties of arsenious acid, M. Bussy has arrived at the following conclusions. 1. The vitreous, so far from being less soluble in water than the opaque acid, as stated by chemists, is, on the contrary, much more soluble. This difference is nearly in the proportion of three to one at about 53° to 55° of F.; the same quantity of water which dissolves 36 to 38 parts of the vitreous acid, will take up only 12 to 14 of the opaque. 2. The vitreous acid dissolves much more rapidly than the opaque. 3. Neither of the varieties possesses a degree of solubility which is to be regarded as strictly peculiar to it. 4. The opaque acid is converted into vitreous acid, by long boiling in water; that is to say, it then acquires the same degree of solubility as the vitreous arsenious acid, which is such that eleven parts are dissolved by one-hundred of water. 5. Under the influence of water and a low temperature, the vitreous acid is converted into opaque acid, that is to say, a solution of vitreous acid becomes reduced, after a certain time, to the point of saturation which belongs to the opaque acid. 6. The mixture of the two varieties of acid in the same solution, explains the anomalies observed in the solubility of arsenious acid, which, in fact, offers nothing opposed to the principles admitted by chemists. 7. Division, which facilitates the solution of the opaque acid, without, however, increasing its solubility, considerably diminishes that of the vitreous acid, and to such an extent, that this acid reduced to fine powder and levigated, is not sensibly more soluble in water than the opaque acid; this resulting, unquestionably, from a transformation which it undergoes, either at the moment of pulverization, or of contact with water. 8. Acid which has been rendered opaque by the action of ammonia, and acid crystallized in water, act similarly with water, and appear to belong to the same variety. 9. The opaque acid dissolves more slowly than the vitreous, in dilute hydrochloric acid. This circumstance, which thus modifies the nature of the products formed during solution, explains why the luminous phenomena observed by M. Rose in the crystallization of the vitreous acid, are not in general observable with so great intensity in the solution of the opaque variety. 10. The difference which has been observed in the action of the two arsenious acids, on tincture of litmus, is merely apparent. If the opaque acid does not redden the tincture, it is on account of its slight solubility, and especially because it dissolves slowly, whilst the vitreous acid, which dissolves readily, immediately reddens the tincture. But if comparative experiments be made, and the tincture be exposed to the action of the powder, it becomes gradually red, and no difference is perceptible at the expiration of three or four days.—*Comptes Rendus*, May 1847, *Ibid.*, August 1847.

T. R. B.

71. *Infanticide*.—The following case is of interest, in consequence of a peculiarity in the law of the State of Pennsylvania.

Commonwealth v. Mary Brown.—After the testimony had concluded, the Recorder of Philadelphia (Richard Vaux), said the facts which appear are these:—

That the prisoner was delivered of a living child; that when accused of having been so delivered, she did not deny it; that she was not aware of her condition prior to her delivery; that the time when, or under what circumstances, the child died, are not known, nor pretended to be susceptible of clear proof; no facts were in evidence which raise the presumption that the prisoner either killed her offspring, or that she was even aware of its death. As to the charge of concealment, the evidence strongly proves that if any concealment existed, it was to conceal its birth. Under the act of Assembly of the 17th of April, 1794, the words of which are “if any female shall endeavour privately, either by herself or the procurement of others, to conceal the death,” &c., the only criminal act is, the con-

cealment of the *death*. So that if the *birth* is concealed, and death unknown to the mother, or even suspected by her or her friends or companions, it seems under the words of the act, that the death following the concealment of the *birth*, is no crime.

In the case of the *Commonwealth v. Emenetta Clark*, Judge King has so construed the law, as to place it beyond a doubt, that after the birth, the death must be so concealed as to prevent its being brought to light, whether it was born dead or alive, or whether it was murdered or not. The Commonwealth has failed to establish two facts material to this case: 1st, that the child was a bastard; 2d, that the prisoner endeavoured to conceal the death of the child. The facts go strongly to show, that the child died from the usage it received from the time the mother was taken in labour, to the time the dead body was discovered. The idea of the murder of the child by its mother, is not, in the least degree, sustained by the evidence; that the child was born alive is clear, and the only charge left to be considered is, whether the concealment is such as under the statute is constituted a criminal offence. It has been ably argued by the prisoner's counsel, that the charge of concealment, is only a concealment of the *birth*, and therefore not punishable.

It does appear to me, that the position of the prisoner's counsel is sound, and the prisoner is therefore discharged. To punish such offences in future, the legislature should explain the law referred to; as it stands, in the Statute Book, it is almost a dead letter.—*Recorder's Decisions*, 1846.

T. R. B.

72. *Poisons of the Assamese*.—"A most deadly poison is extracted from a kind of root, denominated *mishmee bih* (or poison), brought from the Mishmee country, on the northeast quarter of Assam. With this, the natives in Upper Assam generally cover the tips of their arrows, and destroy elephants for the sake of their ivory tusks. So powerful, so deadly is the effect of the poison, that the slightest scratch or puncture of an arrow smeared with it, proves fatal; if not instantaneously, at all events, in a few hours after an elephant has been stricken. Deer and buffaloes are also killed in the same manner. *Immediately the animal falls*, the wounded part is cut out, and the flesh is then eaten by the natives, without apprehension of any ill effects arising from the inoculation of the body by the poison; at least, I never heard of a single instance of a person losing his life from having eaten of the flesh of animals killed by poisoned arrows, common as is the practice of partaking of such food. Safety appears to be secured by excising the wounded part."—*A Sketch of Assam, by an Officer of the Bengal Infantry, quoted in London Literary Gazette*.

T. R. B.

73. *Bronzing of Confectionary*.—According to the Police Regulations of Paris, confectioners are allowed to use only gold and silver, as metallic ornaments to confectionary. Copper, bronze, and all the alloys of copper and zinc are prohibited. Some confectioners have, however, employed sham gold; an alloy formed of zinc and copper. A large quantity of confectionary thus ornamented, has been recently seized at Bourdeaux, and an action has been commenced against the confectioner who supplied the articles. He produced some of the powder, which he said he procured of a druggist, who sold it to him as a mixture of talc and oxide of gold. The application of nitric acid and ammonia, however, soon proved that the gold was a copper alloy.—*Journal de Chimie*, Feb. 1847. Nitric acid is perhaps the best test, as some of these alloys very closely resemble red gold in colour. The copper alloy is immediately dissolved by the acid, forming a green coloured solution; gold remains unaffected. These copper alloys are much used in England for ornamenting gingerbread, and Scheele's green and chromate of lead are also employed for the purpose of colouring sugar plums. *De minimis non curat lex*. The English law thinks any interference with this mode of selling poisons, an invasion of the liberty of the subject!—*London Medical Gazette*, March, 1847.

T. R. B.

74. *Case of Poisoning by Turpeth Mineral*.—(Communicated by Dr. LETHEBY, to the Pathological Society of London.) This substance is a subsulphate of the Binoxide of mercury, and like the other persalts of that metal, is a violent poison.

A young man, aged sixteen, swallowed, on the night of Feb. 19, at twenty minutes past twelve, a drachm. It caused a burning sensation in the mouth and throat, and in about ten minutes he was sick, and vomited a meal that he had taken two hours previously. He now felt scalding pain in the throat, chest and stomach, and this became so severe, that he walked to the London Hospital, where he was admitted under Dr. Frampton. He vomited repeatedly on the road, and was faint and weak. He was admitted at a quarter past one o'clock, and then looked pale and with an anxious countenance; felt cold and complained of sickness, with great pain in the throat and stomach. Sulphate of zinc, with mucilaginous drinks were given. He continued during the night to suffer great pain in the throat and stomach, cramps in the limbs, and violent vomiting and purging. In the morning, in a high state of fever; throat and stomach still painful, the latter somewhat tender on pressure, and so irritable, that nothing would remain on it an instant; tongue and inside of the mouth red and inflamed, feeling raw to him, and bowels much relaxed. Leeches were applied to the epigastrium, and mucilaginous drinks, with opium and henbane were given, without allaying the irritability of the stomach. On Thursday, the purging had ceased, but he still complained of his throat; the breath, also, began to acquire the mercurial fetor, and he spat more than usual. From this time, he became weaker and weaker; nothing would remain on his stomach; his mouth and throat continued exceedingly painful, and he became profusely salivated; the gums acquiring a deep bluish tinge, and beginning to ulcerate at the margins. This condition increased; but he never lost his senses, or became in any way comatose. The debility increasing, he died at eight o'clock of the following Tuesday morning, without any convulsion or struggle, nearly one week after the administration of the poison.

Appearances on dissection; twenty-seven hours after death.—The body was stiff and pale, except the dependent parts. The parotid and submaxillary regions rather swollen; the lips pale, bluish, and the gums purple and ulcerated at the edges. The lungs were so gorged with blood, as to be quite black at the dependent parts. The heart was slightly enlarged and immensely distended on the right side with black fluid blood; on the left, it was nearly empty. The abdominal viscera were rather redder than natural, and showed the meanderings of numerous vessels filled with dark blood; the ascending transverse colon was of a deep leaden colour, and the intestines were contracted throughout their whole course; the œsophagus, from the mouth downwards, was much inflamed, and for about four inches before it joined the stomach, its mucous coat had become opaque, white, and was peeling off in large strips. The stomach contained nearly a pint of dark yellowish-brown fluid; it was not much contracted; its internal surface, especially about the cardia and pylorus, was covered with patches of small petechial spots; elsewhere it had a dirty yellowish-green tint, from the presence of much bile. The intestines were contracted and empty; the internal coat everywhere redder than natural, and the lower part of ilium was covered with numerous isolated petechial spots, of the size of a hemp-seed. This condition was also very evident in the cæcum, and along the whole course of the large intestines; the mucous coat was not anywhere abraded or ulcerated. The liver was enlarged and much congested with dark blood; the gall-bladder was full of bile, the pancreas hard and enlarged; the spleen and kidneys of a deep purple colour, and the bladder empty and quite contracted. The vessels on the surface of the brain were full of black fluid blood. Portions of the intestines were broken down by nitro-muriatic acid, and there was distinct evidence of mercury obtained. The urine was not examined.

The above is an uncommon case, and Dr. Letheby observes, that turpeth mineral is so rarely used in medicine and the arts, that he is not aware of the report of any case of poisoning by it, since the time of Wilmer.

“Among the post-mortem appearances, the most striking were the leaden blue tint of the lips and gums; the ragged ulcerated condition of the latter, the swollen state of the salivary glands, the alimentary canal from the mouth to the anus, redder than natural and studded with livid petechial spots, a condition most manifest from the cæcum downwards. Then again, it is worthy of remark, that the intestines were contracted throughout and nearly empty, and that the colon had acquired a slate or lead colour. The gorged and uncollapsed lungs, together with the distended condition of the right side of the heart, and the emptiness of the

left, pointed to the fact, that death had begun its work at the respiratory organs. This was further evidenced by the turgid condition of the whole venous system, and by the black uncoagulated state of the blood everywhere. In this case there were many points of resemblance to the effects produced by the preparations of lead, especially as regards the blue colour of the gums and the purplish hue of the large intestines, but there were also other points of marked distinction, as in the ulcerated state of the gums, and the universally contracted condition of the intestines and bladder.—*Ibid.*

T. R. B.

75. *On the Essential Oil of Bitter Almonds.* By R. B. GRINDLEY.—There is a great discrepancy of opinion among chemists and toxicologists, whether the pure oil of bitter almonds, or hydruret of benzoyle, is poisonous or not. By some, the known poisonous properties of the crude oil of bitter almonds of commerce, are ascribed entirely to the hydrocyanic acid which it contains, while others assert that the oil freed from prussic acid is still a violent poison. The experiments which are mentioned by Dr. Christison and Dr. Pereira would appear to have settled the question, and to have left no further doubt that pure oil of bitter almonds possesses no poisonous properties; but the assertion of the opposite opinion in the *Outlines of Chemistry*, more recently published by Dr. Gregory, has again created doubts on the subject.

As public attention has of late been much directed to this substance, I felt desirous of making some experiments on it, and my results are as follows:

At first, I adopted the usual plan for removing the hydrocyanic acid, by distilling the commercial oil with a mixture of protochloride of iron and lime; the product was still contaminated with the acid, and several repetitions, conducted with every precaution, were attended with no better success. I then adopted, by the suggestion of Mr. Redwood, the following method, which proved most satisfactory. The oil was mixed with an equal quantity of water, and digested in a water-bath with binoxide of mercury, and small quantities of lime and protochloride of iron; time having been allowed for the decomposition of the acid, the whole was introduced into a copper retort and subjected to distillation. The product consisted of pure hydruret of benzoyle, while bicianide of mercury, benzoate of lime, chloride of calcium, and oxide of iron, remained in the retort, with benzoine and any excess of the ingredients employed.

This process is founded upon the strong affinity which exists between mercury and cyanogen, so that when binoxide of mercury and hydrocyanic acid are digested together, they are both decomposed, bicianide of mercury and water being formed. The protochloride of iron, which, with the lime, yields protoxide, is introduced to prevent the formation of benzoic acid from the oxidation of the oil; for the same reason, care should be taken to conduct the process with as little access of air as possible. The oil thus procured was pure and colourless. No trace of nitrogen could be detected by Lassaigne's test, which I found to be exceedingly delicate, affording indications of the presence of that body in extremely minute quantities of morphine, narcotine, &c. It consists in adding to a very small quantity of the substance to be tested, in a small German glass tube, a fragment of potassium, about the size of a millet seed, and heating the tube in the flame of a spirit lamp, until the organic substance is completely carbonized; the carbonaceous residue is treated with cold water, and to the clear decanted liquor, a drop of a solution containing the mixed oxides of iron is added; a dirty green precipitate is immediately formed, which, if nitrogen be present, is changed into a bright blue, on the addition of a drop of hydrochloric acid.

Five drops of this pure oil were administered to a rabbit, and no effect being produced, ten more dissolved in olive oil, were given to the same animal the following day, still without any injurious results, except slight irritation, attributable to the acidity of the oil; thus giving satisfactory evidence of the fact that essential oil of bitter almonds, when *pure*, does not possess poisonous properties.

The extreme difficulty of freeing the oil from the hydrocyanic acid by the usual process, seems to account for the contradictory results of former experiments, and when we reflect on the numerous fatal consequences attending the use of this article for domestic purposes, and the simplicity and economy of the above process, it becomes important that manufacturers of this article should give their attention to this subject, and endeavour to supply the public with a preparation at

once perfectly harmless, and still possessing the agreeable flavour for which it is so highly esteemed.

To the above, the editor subjoins the following article from a Manchester newspaper, proving the dangerous qualities of the *commercial article*.

"I was called professionally to a lady, labouring under symptoms which induced me to inquire into the diet taken on the preceding day, when a statement was made, proving that some custard of which she had partaken had acted poisonously, (though, happily, not fatally,) her symptoms having been such as are familiar to medical men, as the effect of an overdose of prussic acid. Bitter almonds in substance, and in the form of essence, likewise the kernels of stone fruit, contain this acid in different proportions, and this fact should be known, as it is much to be feared that these articles are used ignorantly with respect to their dangerous properties. In mentioning the case of my patient to a medical man, he informed me that a friend of his had had placed before him some custards, which seemed to be superimregnated with bitter almonds. On questioning the cook, as to what she had used, she replied, "nothing but almond water, which is a harmless thing; I'd drink a bottlefull of it." "Would you?" replied the gentleman, "then bring me the liquid and the cat." On pouring a small quantity of the liquid into the animal's mouth, poor puss instantly expired. The object of this notice, then, is to caution druggists especially, against selling bitter almonds, or the preparations entitled essence of the same, without full and explicit *printed* directions as to the quantity which may be safely used (if the pampered palate require that they should be used at all), as adjuncts to custards, puddings, and such like articles of diet.—*Pharm. Journ.*, July 1847. T. R. B.

76. *Ledoyen's Disinfecting Fluid*.—This article appears to be exciting considerable attention abroad. We gather from various journals, and particularly the *Pharmaceutical Journal*, for August, 1847, that M. LEDOYEN, the discoverer, claims for it all the efficacy usually attributed to chloride of lime, as a disinfectant, without the disadvantage of causing the evolution of any deleterious compound, and that night soil or other refuse, might, by means of this fluid, be entirely deprived of its noxious odour, at the same time, that its properties as a manure would be rather improved than deteriorated. It was also described as being a certain specific against contagion, and an unexpensive compound, easily procurable.

M. Ledoyen refused to disclose his secret, on the ground that in doing so, he would deprive himself of the chance of any pecuniary advantage, although he at the same time offered to submit the liquid to experiment before any tribunal.

"M. Ledoyen, however, in conjunction with Col. Calvert, succeeded in introducing the fluid to the notice of the government; a parliamentary inquiry ensued, and a report was published. During the whole of these proceedings, the secret was kept so inviolate, that none of the fluid could be obtained, except on a promise that it should not be chemically examined, and we could not even obtain it from the Fever Hospital, where it had been in use for many weeks, because we declined to take the pledge. A small quantity, however, was recently furnished from another source without the pledge.

"It is now generally known that the fluid is a solution of nitrate of lead, which, like other salts of lead, decomposes sulphuretted hydrogen and hydrosulphate of ammonia, thus destroying the smell and producing innocuous compounds. That the salts of lead possess this property is known to every student in chemistry, and these salts are familiar to the profession as applications in the form of lotion and for other purposes. We have known Mr. Ure prescribe a solution of nitrate of lead as a lotion for foul ulcers two or three years ago.

"It therefore requires no further proof to establish the fact, that the salts of lead are adapted as decomposing agents, for neutralizing animal or vegetable effluvia, in which sulphuretted hydrogen is the active ingredient. But it remains to be proved that the fluid in question is a specific against the miasma of fever, which, in the opinion of some of our best chemical and medical authorities, is distinct from sulphuretted hydrogen, although generally a concomitant.

"On the supposition that sulphuretted hydrogen is the cause of fever, it might be expected that the students in a chemical laboratory, where the air is constantly

contaminated with the gas, would be particularly liable to febrile attacks. This, however, is not found to be the case.

"It appears that M. Ledoyen does not contemplate securing to himself by patent the exclusive right to sell his fluid, but claims from the government, such reward as may appear on investigation to be due to him, as the discoverer of a dis-infecting agent of great importance to the health and welfare of mankind. A similar application was made to the French government, but the grant was refused."—*Pharm. Journ.*, August 1847. T. R. B.

ETHER INHALATION AS A MEANS OF ANNULLING PAIN.

The introduction of the inhalation of ether as a means of annulling pain, is the most interesting and perhaps important event in the medical history of our time. We had hoped, in the present number of this Journal, to have been enabled to give a full account of the effects of this agent, so as to furnish our readers with the data for determining its exact effects, its precise value as a means of annihilating pain, and to discriminate the cases to which it is applicable. Unhappily the materials for this do not as yet exist. On every point connected with this subject, much diversity of opinion exists, and even reports of experiments are so far at variance, that it is impossible to entirely reconcile them. Under these circumstances, all that we can do is to chronicle the principal facts which have been brought to light, and leave our readers to draw such deductions as they may feel that these imperfect materials authorize.

§ 1. *Mode of Administering Ether, and Precautions to be observed.*

Various and complex forms of apparatus have been contrived for administering ether vapour, but it seems now well settled that a simple flask, containing flannel, or some porous material saturated with ether, and with a hole in the side to admit atmospheric air, and a simple mouth-piece; or a piece of sponge saturated with ether and held over the mouth and nose, answers perfectly well.

77. The following rules are given by Dr. Ranking to be observed in its exhibition:—

1st. The ether employed should be the purest washed sulphuric ether.

2d. The patient should be allowed to respire atmospheric air alone for a few moments if the apparatus is so formed as to allow of it; if not, the nose should not be closed until several respirations have been taken, and the patient continues to breathe without trepidation.

3d. The ether should not be turned on in a full jet at once, but the stopcock should be so regulated as gradually to accustom the bronchial tubes to the vapour.

At this time coughing is apt to ensue, especially if the ether be not perfectly pure; this symptom, however, soon subsides, or can be moderated by a regulation of the jet of the ether.

4th. Surgeons differ in opinion as to the exact point at which inhalation should be suspended; we believe that for surgical purposes, Mr. Robinson's test, as afforded by the state of the eye, will be a sufficiently good guide.

5th. In prolonged operations, it is necessary to alternate respiration of pure atmospheric air with that of ether vapour; this is accomplished by removing the clip from the nose, or still better, in those instruments which are so made, by shutting off the ether and turning on the air.

78. The precautions which seem requisite are thus stated by Dr. Ranking:—

1st. Never to exhibit the ether vapour without having previously auscultated the heart and lungs.

2d. Never to employ it in persons who have signs of obstructive disease of the heart to any amount, or of dilatation of its cavities, or whose heart is feeble, even though not disproportioned.

3d. Never to employ it in persons who have any considerable portion of a lung unfitted for respiration, as from hepatization, tubercular deposit, pleural effusion, &c.

4th. In persons with short necks, with tendency to cerebral congestion, its employment is not without risk; also (perhaps) in those with disposition to insanity or other recurrent disease of cerebral origin.

5th. No operation of consequence should be performed under the influence of ether without a preliminary "trial" exhibition.—*Half-Yearly Abstract.*

§ 2. *Physiological Action of Ether.*

The most valuable of the recent experiments which have been made with a view of determining the physiological action of ether, are the following:—

79. *Experiments illustrating the Effects produced by the Inhalation of Ether upon the lower Vertebrate Animals.*—By HOLMES COOTE, Esq., and THOMAS TAYLOR, Esq. (*Lancet*, June 19th, 1847.)

These experiments, eight in number, illustrate some of the principal phenomena which the respiration of air impregnated with the vapour of ether may produce upon the animal frame. A feeling of discomfort, indicated by a distressed look, glassy eye, and attempts to escape, is quickly followed by more rapid and more powerful contractions of the heart, by increased rapidity of circulation throughout the whole vascular system, by deeper and laborious, or by more frequent acts of inspiration, and an excited condition of the brain. Then the cerebral functions become oppressed; sensation and the power of motion become more and more impaired; the action of the limbs becomes irregular and wild, and the animal reeling and staggering from side to side, eventually falls down as if lifeless. But respiration still goes on; the capillary circulation is unusually active; and although the muscular system generally is in a state of relaxation, the involuntary muscles seem preternaturally excited; both the urine and the feces may be suddenly voided. This stage of complete insensibility is followed, after a time, by symptoms of congestion of the brain; the respiratory act becomes less frequent; the blood, of a dark blue colour, stagnates in the capillaries; the extremities feel cold; the lips are blue and livid; and if the animal be not speedily removed into pure air, respiration first stops—then the contractions of the heart become fainter and fainter—lastly, the peristaltic action of the intestinal tube ceases. Upon examining the bodies of those destroyed by the inhalation of ether, there is found great congestion of the vessels of the pia mater, and of the sinuses at the base of the brain; the vessels of the medulla oblongata and pons Varolii are especially turgid with dark-coloured blood; both sides of the heart are distended by fluid black blood. The air-sacs of a frog (exp. 1) were full of air; the lungs of the guinea-pig (exp. 6) were in a state of collapse.

The authors draw the following important practical inferences from their observations.

1. The vapour of ether, when inhaled continuously, and in considerable quantity, is capable of destroying life, by producing an accumulation of dark blood in the vessels at the base of the brain.

2. The commencement of this state is indicated by slow and laborious respiration—by failing pulse, cold extremities, and blue, livid lips.

3. The arterial blood is, under these circumstances, of the same dark colour as that contained in the veins.*

4. The slow circulation, or the stagnation, of such a fluid in the cerebral vessels may produce effects which the inspiration of pure air will be unable to rectify.

5. Great judgment, therefore, should be exercised in compelling patients struggling for pure air to inhale through the ether apparatus.

6. But a state of insensibility, produced by the proper influence of the ether, may be safely prolonged for a very considerable time, by permitting the occasional inhalation of pure air, and by re-administering the ether only when symptoms of consciousness are beginning to manifest themselves.

7. The involuntary muscles, so far from being in a state of relaxation, as are the voluntary muscles, seem to be preternaturally excited, and to act with increased power.

* During the performance of amputation of the forearm, upon a patient under the influence of ether, at St. Bartholomew's Hospital, in the month of March, it was observed that the blood, flowing from the radial, ulnar, and interosseous arteries, was of as dark a colour as that contained in the veins.

80. *Influence of Ether on Respiration.*—M. VILLE, in conjunction with M. BLANDIN, has instituted some experiments on the influence of ether on respiration, and the results show that in that state of complete insensibility where the sight seems lost, where the limbs have lost heat, and, often, the power of motion, respiration develops more carbonic acid than in the opposite condition, where the play of the organs can go on freely and naturally. In the progress of etherization, the carbonic acid thrown off during respiration always augments in quantity in proportion as sensibility becomes enfeebled, and, on the contrary, diminishes as sensibility returns and is re-established.

The following are some of the results of the experiments:—

Carbonic acid produced during natural respiration.	During the state of insensibility.	Ether contained in the air inhaled.	Duration of inhalation.
No. 1.—2.41	4.84	6.70	2 min. 30 seconds.
2.—3.05	4.38	2.17	2 min. 30 seconds.
3.—2.79	3.11	12	4 min.
4.—1.36	3.32	12.68	4 min.
5.—2.04	4.42	14.11	2 min. 30 seconds.

—*Lancet*, July 10, 1847.

81. *Morbid Appearances.*—The morbid appearances which have been found after death, caused by ether in animals, are similar to those observed in asphyxia, namely, fluidity of the blood, its collection in the right side of the heart and large veins, and engorgement of the internal viscera. In the fatal case of the Royal Infirmary there was found double pneumonia, bronchitis, and secondary purulent deposits in the joints. In the case of Mr. Nunn, cerebral congestion, lungs engorged posteriorly, and uniform fluidity of the blood. In the case at Grantham there was no great congestion, but the blood was fluid throughout. The observations of Amussat and Lassaigue have shown that in every case the blood loses its power of coagulation, although, with the exception of the presence of a minute dose of ether, its chemical principles are unchanged.—*Monthly Jourh. Med. Sci.*, April 1847.

Some further information regarding the physiological action of ether is furnished in the next section.

§ 3. *Employment of Inhalation of Ether in Surgical Practice.*

It is impossible to chronicle all the individual cases, so numerous are they, in which inhalation of ether has been successfully employed to annul pain in surgical practice. They embrace almost every operation in surgery; and what is most extraordinary is, that an agent so potent should have been administered in such numerous instances, and so few examples be recorded of injurious results. It may be useful, however, to show that it is not always effectual, and that sometimes very distressing consequences follow its use. This is the more important, because, from the tone of some journalists, we have reason to believe that many have been misled on this point.

The following case is well calculated to induce caution in its use:—

82. *Ill Effects of Ether.*—Mr. COPEMAN relates, in the *Provincial Medical and Surgical Journal* (February 10th), the following case, in which very distressing effects resulted from the inhalation of ether.

“The experimenter was a medical gentleman, who requested me to extract a tooth for him, provided he could make himself insensible to pain by means of ether. He breathed the vapour for several minutes without any apparent effect, but soon afterwards thrust the apparatus *suddenly* from him, exclaimed that he could bear it no longer, staggered about the room, and was assisted to a chair. His breathing became very difficult; his arms were stretched out; his fingers extended; and he was perfectly cataleptic. I would then have attempted to draw his tooth, but he showed some resistance, and his breathing was so exceedingly laboured, that it would have been almost impossible to perform that or any other operation. Each expiration was accompanied with a loud *Hah!* his eyelids were closed; his head was hot; pupils not altered; conjunctivæ much injected; pulse 120; and his appearance altogether was so distressing as to excite great alarm in the minds of the bystanders.

I applied cold to the head; gave some brandy and water, for his hands were cold; and admitted fresh air freely into the room. Soon the cataleptic symptoms disappeared, and were succeeded by severe hysteria, with about the same degree of consciousness as is usual in that disease. With some difficulty I led him to the outer door, when he exclaimed "Cover my chest," "cold, cold, cold." He was then removed to the sofa, when he was seized with severe cramp in the legs, the difficult breathing still continuing. I gave more brandy and water; applied hot flannels to the feet, and cold water to the head; admitted fresh air freely, and watched the progress of the case with no little anxiety; for these distressing symptoms continued for *more than an hour*, during which time I had to contend against the most fearful apprehensions of the mother, as well as to administer relief to a near relative who had voluntarily taken a poison, the effects of which I had not before witnessed, and the probable result of which I could not from experience determine. At last a few deep inspirations ushered in a state of semi-consciousness, the patient raised himself to a sitting posture, and looked about him with a vacant stare, the conjunctivæ being very red and suffused. He attempted to rise, but tottered like a drunken man, and suffered a degree of exhaustion and giddiness which lasted until he was taken to bed. He slept well, but next morning complained still of languor. I should mention, that while he was lying on the sofa I applied strong ammonia to his nose, without producing any visible effect, and he had afterwards no recollection of the circumstance.

"The description afterwards given by the patient of his sensations whilst under the influence of the ether, was as follows:—He felt nothing for several minutes, but on a sudden appeared to lose all muscular power. He seemed to take leave of the external world, but experienced a dreadful sensation of universal tremor, and yet a perfect fixedness of the limbs. He felt irresistibly disposed to lie down, and get his head upon the ground; was much distressed with a sensation of cold; also of tightness across the chest; and although he seemed to be aware that persons were talking to him, had no consciousness of what was really passing around him. He said his sensations were so dreadful that he would rather undergo any amount of pain than submit to the same again, which he could compare only to a state of utter helplessness and impending dissolution.

"The impression on my own mind was, that I would on no account willingly produce a similar train of symptoms; and that, if such were to be the *frequent* effects of the ether, there would be few who would wish to exchange for them the pain of a surgical operation.

"The apparatus employed was a glass jar, with openings at the top, into one of which was inverted a flexible tube for inhalation; and into the other a funnel, containing a piece of sponge, saturated with ether. About an ounce of ether, and several pieces of sponge, were in the jar. The patient was 23 years of age, spare, and of nervous temperament, with a brain very active and excitable. The time at which the inhalation was performed was soon after dinner; I presume, therefore, that neither was the constitution of the patient suited to the exhibition of ether, nor the time for the performance of the operation judiciously chosen. Certain I am, that it would have been extremely difficult to perform any operation requiring steadiness or delicacy in its execution during the presence of such symptoms as were produced in this instance by the inhalation.

"It is clear that great judgment is required in the selection of cases, and that the inhalation of ether ought on no account to be practised by any but competent medical practitioners. The object for which it is employed is so desirable, that in all probability it will become general in the profession; but in order to be useful, *it must be safe*, and I trust the above narrative will prove, as it is intended to be, a warning against the indiscriminate employment of a powerful agent, which, in incompetent hands, or under unfavourable circumstances, is capable of producing very disagreeable if not *dangerous* effects."

83. *Injurious Effects of the Inhalation of Æther.* In a letter from Dr. PICKFORD.—Sir: Through the medium of the daily press, the public have been made acquainted with the powerful efficacy of the vapour of ether in annihilating suffering during surgical operations. The question of the possibility of any ill effects to the general health arising from so subtle an agent has not been mooted; and, with the

startling exception of an occasional coroner's inquest on the bodies of those who have died after operations performed during the state of insensibility consequent upon the use of ether, the public have neither read nor heard of any other than the most triumphant success of this new remedy. They have been taught to expect from its administration perfect immunity from pain and suffering of all kind, without fear of after consequences.

On this latter point, through the medium of the same channel, the columns of the daily press, I would undeceive the public mind.

We are told, that in the majority of cases, after inhaling the vapour for three or four minutes, a state of absolute unconsciousness, a corpse-like condition, is induced, during which the most severe and painful operations may be performed without the patient evincing the slightest evidence of sensation,—that the patient wakes, as it were, from a “pleasant dream,” and feels no inconvenience whatever from the inhalation. This is, I fear, the bright side of the picture; it is, at least, a proposition from which I dissent.

Let us inquire what is the condition of the pulse, of the respiration and countenance during the state of insensibility, and on what these conditions depend.

The circulation at first becomes rapid, then slow and feeble; the respiration, bearing a due relation to the frequency of the pulse, becomes laboured and stertorous, the countenance is livid, the lips and tongue are blue, the pupils are dilated, the muscles universally relaxed, the functions of the brain and nervous system are suspended, sensation is annihilated, and the patient, to all intents and purposes, for the time being, is a senseless corpse.

It has been said by M. Roux and others, that this state bears a close analogy to drunkenness; by Baron Flourens, that it resembles asphyxia, and by others it has been likened to apoplexy of the congestive form. These are fallacies which I am prepared to dispute. Etherization, as it has been termed, has nothing in common with drunkenness, with asphyxia, with apoplexy, save the state of insensibility; but it has something far more alarming and dangerous than any or all of these conditions taken severally or collectively.

As a general principle, it is acknowledged that no agent, be it what it may, which produces a sudden and violent effect, can be safely employed. In the particular cases before us we have to contend, not only with sudden and overwhelming effects, but, what is far more important, with a chemical and vital alteration in the constitution of the blood itself, of which the state of insensibility is but the natural consequence.

The change which the blood undergoes in respiration is almost entirely confined to the blood corpuscles. These, which represent in their independent act of metamorphosis the real vitality of the blood, and from which its fibrin is formed, indispensably require for their healthy change a due supply of oxygen. If this supply be lessened or altogether cut off, their metamorphosis is imperfectly effected, or entirely suspended, and the amount and plasticity of the fibrin are proportionably diminished or altogether arrested.

The blood, robbed by the ether of its oxygen, impoverished by the solution by the same agent of myriads of corpuscles, of those especially with which it comes into immediate contact, depreciated as a consequence in the quantity and deteriorated in the quality of its fibrin, intensely blackened by the solution of its corpuscles and their contained hæmatoglobulin, is chemically deprived, to a considerable extent, of its powers of coagulation, and rendered unfit for the purposes of life. A black vitiated blood circulates through the system, analogous, in many particulars, to that in putrid and malignant fevers.

This impaired condition of the blood is not even partially corrected until respiration of atmospheric air has been permitted for some considerable time, and until lymph corpuscles have found their way into the circulation to replace those of the blood destroyed by the ether. Many persons, especially those who are out of health or enfeebled by long previous disease, are hours, days, nay weeks, recovering from the state induced by the inhalation; many die from its direct effects,—from the want of oxygenized and vitalized blood to stimulate healthfully the brain and nervous system.

With a view to counteract some of the ill consequences of etherization, it has been proposed that the patient should inhale oxygen gas “as an antidote.” This,

of necessity, presupposes the exhibition of a *poison*. So that a patient about to undergo operation is to inhale a poison, be subjected to its deleterious effects, and then to swallow an antidote, as though the operation were not of itself sufficient, without all this extra complication of poison and antidotes, suspended animation, or actual death, proximate or remote.

But what are the facts? Etherized blood cannot be reddened by oxygen gas, simply because its black red colour is not dependent alone on a chemical change in the hæmatin. The ether has also dissolved the blood corpuscles, and thus permitted the escape of the contained hæmatoglobulin; and these it cannot restore. Had the blood been merely rendered artificially venous by the absorption of its oxygen, or by cutting off its ordinary supply, its arterial colour would be restored by agitating it with oxygen. In the following experiment, these facts are pretty clearly established.

In each of two vessels I caught eight and a half ounces, by weight, of arterial blood; both vessels were instantly plunged in water at a temperature of 98° Fahr.; the blood in one vessel was exposed for three minutes to the influence of the vapor of ether. The blood became of an intensely black red colour, whilst coagulation was, to a very considerable extent, interrupted. Subsequently oxygen gas was diffused through the etherized blood; but no restoration of colour could be produced. Placed in the field of a powerful microscope, numerous flocculi, the remains of the capsules of the corpuscles, were observed floating in the fluid portion of the blood, which was rich with these remains. At the expiration of 72 hours the blood in both vessels was weighed—that which had been subjected to the vapour of ether yielded *five and a half ounces* of black red *fluid*, and three ounces of a stringy *clot*, conclusive evidence of the small amount of fibrin. The fluid portion of the blood (serum) in the other vessel, in which neither flocculi nor corpuscles could be detected under the microscope, weighed half an ounce, the *clot eight ounces*.

This indisposition of the blood to coagulate after the inhalation of ether offers another very serious consideration. Fatal hemorrhages must occur, and do occur; and as the whole circulating fluid is deteriorated by the ether, is it matter of surprise that the lips of wounds evert, that the discharge is unhealthy, that stumps become flabby or gangrenous, and that patients sink and die?

Etherization, it is to be feared, exerts also a baneful influence directly upon the respiratory organs. A medical friend in Dublin informed me recently, that of thirty fatal cases following operations in which ether had been employed in the various hospitals of that city, eight were found to be the subjects of recent tubercles of the lungs, the undoubted product, it was believed, of inhalation.*

The endeavour to alleviate human suffering under one of the most trying of all situations, the knife of the surgeon, is highly praiseworthy, and the public must feel deeply indebted to those medical gentlemen who have devoted their time and talents in the attempt to achieve so desirable an end. It becomes us, however, to ascertain, so far as we are able, whether the means employed are compatible with the health and lives of those about to undergo operations.

Pain during operations is, in the majority of cases, even desirable; its prevention or annihilation is, for the most part, hazardous to the patient. In the lying-in chamber nothing is more true than this: pain is the mother's safety, its absence her destruction. Yet are there those bold enough to administer the vapour of ether even at this critical juncture, forgetting it has been ordered that "in sorrow shall she bring forth." I have the honour to be, sir, your obedient humble servant,

JAMES H. PICKFORD, M. D.

1 CAVENDISH PLACE, Brighton, 29th May, 1847.

Edinburgh Med. and Surg. Journal, July, 1847.

84. *Injurious Effects of Ether Inhalation*.—The Editor of the *Monthly Journal of Medical Sciences*, (number for April, 1847,) states, "that inconvenient effects have frequently resulted from the inhalation. Many of these will be found related by Professor Syme and Dr. Roberts, in our report of the meetings of the Medico-

* Mr. Macdonnell asserts (*Prov. Med. and Surg. Journ.*, July 14) that this statement is altogether groundless.

Chirurgical Society of Edinburgh. Great excitement, cough with expectoration of pus, hemoptysis, and convulsions, during the inhalation, have been witnessed by ourselves. In some cases, erotic feelings, and even nymphomania, have been occasioned in females, in others hysterical symptoms, or those of depression or intense headache, which have continued several days. In our last number we noticed the occasional occurrence of alarming sinking, which required vigorous measures to restore the individual. In some cases, the individuals have been thrown into such a state of agitation as to render the performance of the operation impossible.

Fatal effects have become multiplied. In our last number, one fatal case was noticed, occurring in the Edinburgh Royal Infirmary. We are informed that there are just now two other cases in which the ether was given, dying of secondary purulent deposits in the same institution.* Is this result the effect of ether? An answer in the affirmative cannot be decidedly given, but, as we previously stated, all such cases require to be put on record. M. Jobert has brought forward two cases in which he considered death to be partly dependent on the ether. M. Roux has given another of tetanus, in which the patient never rallied from the stupefaction, and where death was decidedly accelerated by it. Mr. Nunn, of Colchester, has recorded a case of lithotomy, which sank without the patient having rallied from the operation; and Dr. MacLagan has mentioned another, occurring in London after amputation of the thigh.

We observe in the Times, an account of an inquest at Grantham, in the County of Lincoln, in a case where an osteo-sarcomatous tumour was removed by Mr. Robbs, surgeon, under the influence of ether. The patient never rallied from the operation, which was in no way severe or prolonged, and the jury found "that the deceased, Ann Parkinson, died from the effects of the vapour of ether, inhaled by her for the purpose of alleviating pain during the removal of a tumour from her left thigh, and not from the effect of the operation, or from any other cause." In the correctness of this verdict the surgeon himself, Mr. Robbs, concurred.

85. *Ether Inhalation in Tetanus*.—Dr. W. H. RANKING, of Norwich, relates, in the *Prov. Med. and Surg. Journ.*, April 21st, a case of traumatic tetanus, in which he tried the ether inhalation, and with injurious effects. The first inhalation aggravated the spasm in a tenfold degree; the body of the patient became perfectly opisthotonic; foam issued from the mouth, and the man presented a most frightful spectacle. After allowing the effects to subside, it was again had recourse to, with a recurrence of the same symptoms.

In a case in which this remedy was tried in France, death was unquestionably hastened by it.

Two cases are also recorded, one by Dr. BRADY (*Dublin Medical Press*), and the other by Mr. BROUGHTON (*Prov. Med. Journ.*, May 5th), in both of which ether inhalation was tried, without at least averting a fatal result. Two cases are also recorded in which it is said to have cured the disease, the first by M. Petrusco (*Clinique de Marseilles*), is by no means satisfactory; the second, by Mr. Hawkesworth, is scarcely more so, having been reported in an English newspaper, from which it is copied into the *Prov. Med. and Surg. Journ.*, May 19th.

§ 4. Inhalation of Ether in Obstetrical Practice.

86. The applicability of ether vapour to Midwifery practice, is a question very difficult to decide from the many circumstances which must be taken into account. Dr. Ranking, in his Abstract, has well stated these difficulties.

"Many circumstances," he says, "conspire to render the application of ethereal vapour to the purpose of annihilating the pangs of childbirth the most interesting feature in the history of the discovery; but at the same time, from the number of points to be taken into consideration, in a process so complex as that of parturition, it is, of all the applications of the agent, that concerning which it is the most difficult to arrive at satisfactory conclusions. We have not to determine merely whether the inhalation of ether is capable of suppressing the pain which accompanies parturition, but we have to take note also of other conditions which com-

* One of these has since expired.

pligate the problem. The action of ether upon the fœtus, and upon the general economy of the mother; whether the insensibility which paralyzed the voluntary muscles would not likewise abolish the contractility of the uterus and abdominal muscles—were all so many novel questions which it was necessary to elucidate. It required, we think, no small courage to take the first step in solving a problem so important; a problem in which to err would not have been to commit a mere physiological blunder, but, in point of fact, to sacrifice the two lives, the preservation of which was confided to our care. It would be premature at the present time, to make any decided observations as to the general applicability of ether to midwifery.”

87. *Application of Ether to Obstetric Practice.*—Prof. SIMPSON, of Edinburgh, was, we believe, the first to test the application of ethereal inhalation to produce insensibility to the pangs of labour. In the *Monthly Journal of Medical Science*, for March last, he has published an account of some of his early trials, and the views he entertained relative to the use of this agent. In this paper he observes:—

“In obstetric as in surgical practice, the degree of insensibility produced by etherization, and its accompanying phenomena, differ much in different instances. In some, a state of total apathy and insensibility seems to be produced; others move about and complain more or less loudly during the uterine contractions, though afterwards, when restored to their state of common consciousness, they have no recollection of any suffering whatever, or, indeed, of anything that had occurred during the inhalation and action of the ether; others again, remain quite aware and conscious of what is going on around them, and watch the recurrence of the uterine contractions, but feel indifferent to their effects, and not in any degree distressed by their presence; and in another class again, the attendant suffering is merely more or less diminished and obtunded, without being perfectly cancelled and annulled.

“On the evening of the 13th inst., in two cases that rapidly followed each other, I witnessed, in the above respect, two very different conditions induced by the use of the ether. The patients (who each had borne several children previously) were both placed under the influence of it just as the os uteri became fully opened, and in neither did the full expulsion of the infant through the pelvic passages require above twelve or fifteen minutes. My first patient (the wife of a clergyman) subsequently stated, that she knew all that was said and done about her, was aware of the pains being present, but felt no distress from any of them till the supervention of the last strong contraction which drove the head out of the vulva, and the feeling then seemed to partake of the character of strong pressure, rather than of actual pain. Subsequently she told me, she could only look back with regret to the apparently unnecessary suffering she had endured in the birth of her former infants. The second patient, a lady of a timid temperament, and very apprehensive about the result of her present confinement, was induced with difficulty to inhale the ether vapour; but it speedily affected her when once she did begin. In two or three minutes she pushed the apparatus from her mouth, talked excitedly to a female relative present, but was immediately induced to recommence the inhalation; and subsequently, according to her own statement, ‘wakened out of a dream, and unexpectedly found her child born.’ Like many others, she thought hours instead of minutes had elapsed, from the commencement of the inhalation to the period of the complete restoration of consciousness. Making apparently an effort of memory, she afterwards inquired if she had not once awakened out of her dreamy state, and spoken some nonsense to her friend.

“A careful collection of cautious and accurate observations will no doubt be required, before the inhalation of sulphuric ether is adopted to any great extent in the practice of midwifery. It will be necessary to ascertain its precise effects, both upon the action of the uterus, and of the assistant abdominal muscles; its influence, if any, upon the child; whether it gives a tendency to hemorrhage or other complications; the contra-indications peculiar to its use; the most certain modes of exhibiting it; the length of time it may be employed, &c.* In no

* I have, during labour, kept patients under its influence for upwards of half an hour. In exhibiting it, the first, or exhilarating stage of its effects should be passed

case have I observed any harm whatever to either mother or infant, follow upon its employment. And, on the other hand, I have the strongest assurance and conviction, that I have already seen no small amount of maternal suffering and agony saved by its application. The cases I have detailed sufficiently show its value and safety in cases of operative midwifery. And here, as in surgery, its utility is certainly not confined to the mere suspension and abrogation of conscious pain, great as, by itself, such a boon would doubtless be. But in modifying and obliterating the state of conscious pain, the nervous *shock* otherwise liable to be produced by such pain, particularly whenever it is extreme, and intensely waited for and endured, is saved to the constitution; and thus an escape gained from many evil consequences that are too apt to follow in its train. Granting that experience will yet be able to prove its safety and efficacy in modifying and annulling the pains of labour, will (I have repeatedly heard the question asked) the state of etherization ever come to be generally employed with the simple object of assuaging the pains of *natural* parturition? Or (as the problem has not unfrequently been put to me) would we be 'justified' in using it for such a purpose?

* * * * *

"Now, if experience betime goes fully to prove to us the safety with which ether may, under proper precautions and management, be employed in the course of parturition, then, looking to the facts of the case, and considering the actual amount of pain usually endured (as shown in the above descriptions of Merriman, Naegele, and others),* I believe that the question will require to be quite changed in its character. For, instead of determining in relation to it whether we shall be 'justified' in using this agent under the circumstances named, it will become, on the other hand, necessary to determine whether on any grounds, moral or medical, a professional man could deem himself 'justified' in withholding, and *not* using any such safe means (as we at present presuppose this to be), provided he had the power by it of assuaging the agonies of the last stage of natural labour, and thus counteracting what Velpeau describes as 'those piercing cries, that agitation so lively, those excessive efforts, those inexpressible agonies, and those pains apparently intolerable,'† which accompany the termination of natural parturition in the human mother."

This is a very favourable estimate of ether inhalation, but it must be borne in mind that it was derived from a limited experience, the paper bearing the date of February last; what are the present views of the author we do not know, as we have not seen any communication from him giving the results of his further experience, except the following:—

88. *Ether Inhalation in Midwifery Practice*.—Dr. SIMPSON has lately ascertained two important points with regard to the use of ether in midwifery. First, its action may be kept up for hours. In one case he had a patient placed for four, and in another for five hours and a half, under its influence before the child was born. When the patients awoke, about thirty or forty minutes after delivery, they were quite unconscious of the birth of their infants, and could scarcely at first be persuaded of the happy result. Both labours had been previously exceedingly tedious. One of the patients had the child's head arrested at the brim, and after being above thirty-six hours in labour, was delivered by Dr. S. with the long forceps. Second, the fœtus in utero seems not to be deleteriously affected by even such prolonged etherization of the mother. In these two cases the action of the fœtal heart was carefully watched by Dr. S. with the stethoscope, and did not vary above

through as rapidly as possible, and the patient never allowed to be excited or irritated by the nurse or others. I have heard its use strenuously denounced on the ground that its effects, though good, are still of an intoxicating character. But on the same ground, the use of opium, &c. &c., in medicine, to relieve pain, and procure sleep, should be equally reprobated and discarded.

* Dr. Rigby, in his *System of Midwifery*, p. 103, observes, "This is the moment of greatest pain, and the patient is quite wild and frantic with suffering; it approaches to a species of insanity," &c.

† *Traité des Accouchemens*, vol. i. p. 449. "Ces cris perçans, cette agitation si vive, ces efforts excessifs, ces angoisses inexprimables, ces douleurs qui paraissent intolérables," &c.

ten or fifteen beats during the whole time of the etherization. Both children were born alive and well.—*Monthly Journ. Med. Sci.*, April 1847.

89. *Inhalation of Ether in Midwifery Practice.*—BARON PAUL DUBOIS read to the Academy of Medicine, of Paris, on the 23d of February last, a very interesting memoir on the "Inhalation of ether applied to cases of midwifery." The following are the conclusions which his observations justify him, he says, to draw, and his well known circumspection and good judgment invest these deductions with great authority.

"1st. That the inhalation of ether has the power of preventing pain during obstetric operations.

"2d. That it may also momentarily suspend the natural pains of labour.

"3d. That the state of ebriety induced by the inhalation of ether, does not suspend uterine contraction when the latter is decidedly set in and takes place at short intervals; and that it does not impede the synergetic action of the abdominal muscles.

"4th. That the state of ebriety appears to lessen the natural resistance which the perineal muscles oppose to the expulsion of the head.

"5th. That the inhalation of ether has not appeared to exert any bad influence over the life or health of the child.

"Now, after hearing the foregoing conclusions, it may appear natural to suppose that the inhalation of ether being a process to which so many advantages are inherent, it might hence be considered as a precious expedient, and be frequently resorted to by the obstetric art. Such, however, is not my opinion. The very proposal of such a thing, having no other ground but the very few facts I have communicated to the Academy, would not only appear very bold, but should be considered as extremely imprudent. In beginning this communication I related the apprehension under which I laboured at first. Well, the cases I have brought before the Academy may have lessened my fears, but have not yet altogether erased them from my mind.

"You will remember that one of the women who inhaled ether went into a state bordering on that we design under the name of epileptiform. Two other women have died. Now, although the morbid occurrences in the first cases were but of a short duration—although the fatal result in the two other cases rose far more probably from the influence of the epidemic than from any other cause—the Academy must feel that, in a question of so serious a nature, the recollection of these facts must still leave on my mind impressions of doubt and timidity. Later, perhaps, these hesitations may disappear; but even then I shall not forbear thinking that the very nature of things will tend to render very uncommon the adhibition of ether in cases of midwifery. First of all, it is evident that inhalation of ether can never produce a painless labour from beginning to end; it is to be doubted whether insensibility could be made to last long enough for such a result; and it is more doubtful still whether such a thing could be tried without running positive danger, and without being liable to the charge of guilty temerity. Therefore, there only remains for employing ether but the last period of labour, as in the cases where I have used it; and even then, this last period where its adhibition has appeared the most effectual, is the one, according to all mothers, the least fatiguing, the least painful of the whole labour.

"As to the use of ether during obstetric operations, I will only observe that these operations are often rendered necessary by unforeseen circumstances, and that when it thus happens, they are of a very urgent nature. It is not necessary to give further development to the proposition I lay down here, in order to show that in a great number of these cases inhalation of ether cannot be resorted to. As to the remaining cases, it may be asked whether they prove to be generally of such a painful nature as to justify the common use of a process, which even, in conditions unconnected with the puerperal state, is not free from disadvantages, and which, when used under those special conditions, seems to me still less free from the same charge. My profound feeling on the subject is, that inhalation of ether in midwifery should be restrained to a very limited number of cases, the nature of which ulterior experience will better allow us to determine."—*Lancet*, March 6th, 1847.

90. *On the Employment of Ethereal Inhalation in Midwifery.* By Prof. SIEBOLD.—At a meeting of the Royal Scientific Association of Göttingen, held on the 8th of May, 1847, a paper was read by Professor Siebold, “On the Employment of the Vapour of Sulphuric Ether in Midwifery,” of which the following is an abstract:—

The principal questions which had occupied the author’s attention in the investigation of this subject, were—

1st. Whether this new remedy may be employed in natural cases of labour, for the purpose of preventing the severe pains attendant on the latter part of the process of delivery, or

2dly. Whether the use of it is to be limited to cases of operative midwifery.

It must be remarked, in the first place, that, when labour pains are of long continuance, it may be regarded only as common prudence to mitigate or remove those pains which are strongest and most violent—those, namely, which by the schools are called “*dolores conquassantes*,” and under the influence of which the child’s head is pressed through the external genital parts, and is then followed by the trunk. The important moment, then, in which the employment of ether should be resorted to, provided its use in a natural case of labour be decided upon, is that in which the head lies immediately behind the external parts of generation, or has already progressed so far outwards that it becomes evident that at the next pain it will be born.

But, in judging of the admissibility of this new remedy in natural cases of labour in general, the nature of the pains attendant on the process must be especially taken into consideration. These pains are natural phenomena, produced by contraction of the uterus for the purpose of expelling the child. They are endured, therefore, without any detriment, and, even the most severe ones, disappear at once, as if by a charm, directly the child is born. This cannot be said, however, of those pains which are produced by the knife of the surgeon: they, of course, are unpleasant additions to the looked-for effects of an operation, and do not lead, like labour-pains, to a certain desirable result. Unlike labour pains, also, they are, from their first occurrence, of the utmost severity, and are therefore not rendered tolerable to the system, as the former are, by a gradual increase in their severity: they are surgical pains, brought into existence by the hand; whilst labour-pains appear to be intimately connected with the whole process of the wonderful act of parturition, and may, therefore, in contra-distinction to surgical pains, be called *physical* pains.

There is, however, a second kind of pains to which parturient women are subject: these are inflicted from without, and have nothing in common with the real process of labour, but are produced by the hand or instrument of the midwife in cases where an operation is necessary. As the surgeon, so also does the operating midwife, produce pain; and, indeed the parturient woman then suffers doubly, for the ordinary labour-pains continue, and to these are added the sufferings resulting from the operation. The consequences of this often manifest themselves for a considerable time afterwards, and much suffering is thus entailed, in consequence of the great pain inflicted during the operation. For this reason, therefore, must a remedy which promises to relieve or entirely remove these pains, be welcomed in operative midwifery; and even if theory cannot unconditionally speak in favour of the employment of ether in cases of natural labour, yet this offers no tenable argument against the use of this remedy in those cases of labour requiring an operation, providing the employment of it is not attended with any ill effects which would interfere with the performance or the object of the operation.

Several points on this subject require experience for their elucidation—such as whether the female organism can endure without detriment the employment of ether during labour,—whether the efficiency of the pains will not be interfered with,—and, lastly, whether the child suffers any harm. With the view of procuring information on these points, the author has instituted a number of experiments in the Lying-in-Hospital under his charge, and, in his present essay, communicates the results to the Society.

He experimented, in the first place, on healthy non-pregnant women, in order to ascertain the effect of this remedy on the female system. In all the subjects, the effects of ether vapour were duly manifested, sensation and consciousness being more or less suspended. The description of the sensations perceived by

the patients certainly varied; yet they all agreed in their relation of the pleasant and agreeable condition in which they found themselves. In each individual, the same phenomena which were observed the first time were perceived in each subsequent repetition of etherization. In this, the action of ether resembles the effects of intoxication from spirituous liquors.

Experiments were then performed on pregnant women; and during these, attention was especially directed to the effects produced on the child in the uterus. As unconsciousness began to appear, the child seemed uneasy, for its movements increased; but it became quiet again when the stupor of the parent was complete. The action of the child's heart, however, was found to continue quite unaltered, not the slightest change in its frequency and regularity being detected.

After this, the remedy was tried in eight cases of labour. In all of them a greater or less degree of unconsciousness was produced by it; but, with the occurrence of the narcotism, the labour-pains at once ceased, even in cases where but a short time before they had been of the strongest kind. In some the pains returned only with returning consciousness; but in others they were re-excited, during the continuance of the narcotism, by friction over the abdomen. Signs of pain were indeed manifested during the expulsion of the child; yet afterwards there was either no remembrance at all of them, or only a very slight one. No injury was observed to result either to mother or child; for although one child was born in a state of death-like stupor, yet this was not the fault of the ether, for the umbilical cord was found firmly twisted around its neck.

Although the results of the employment of this new remedy in natural cases of labour was therefore not very satisfactory, yet the advantages afforded by it in those cases which required an operation were very manifest. The first case of this kind in which the remedy was tried, was that of a young primipara, in whom extraction of the child by the feet was rendered necessary. The pains endured by this patient were very sincere: she tossed about the bed, screamed aloud, and, by the continual movements of her whole body, rendered even an ordinary examination difficult. But, when brought under the influence of the vapour of ether, she speedily fell into a state of unconsciousness, during which the extraction of the child was effected with ease. She remained perfectly quiet, and a few groans during the operation were the only manifestations of pain which she evinced. Through the irritation which the extraction of the child excited in the uterus, this organ was thrown into contraction, and thus aided the operation. The child made the necessary turns, the arms appeared of themselves, and the head shortly afterwards was born. In about two minutes after the birth of a living child, the woman roused up: she appeared astonished; and, on seeing her child, exclaimed—"Oh, it is all over!—without this I could not have endured it." When further questioned, she said she felt as if in a dream, and fancied she was in her native place, and strolling among trees in blossom. She had no recollection of pain. The case progressed favourably, and terminated well.

Equally successful were the results of two forceps-operations performed while the patients were under the influence of ether. In both cases, indeed, the commencement of unconsciousness was accompanied by cessation of the labour-pains, but in each they were re-excited by the introduction and use of the instruments, and thus aided the operation. The application of the forceps was in both cases unaccompanied by pain, and it was only during traction that any signs of suffering were manifested. When roused from their stupor, the patients possessed no recollection of what had happened to them, and expressed amazement at their labour being over. The children, in both instances, lived. It is deserving of especial notice, that in both the operations, the parts of generation, the vagina and os uteri, were rendered so soft and lax by the narcotism, that the introduction of the blades of the forceps could be effected with the greatest ease. In neither case did any evil consequences result: in one of them, indeed, such effective pains ensued shortly after delivery, that the placenta was spontaneously expelled. The softness and relaxation of parts in these cases lead to the suggestion that in those cases in which strong contraction of the uterus offers considerable difficulty in the performance of a requisite operation—as in cases of turning, or of incarcerated placenta—the vapour of ether may render very efficient service.

If from the above observations it be permitted to come to a decision in regard

to the use of this new remedy, and to answer the two questions stated at the outset, one might, in the first place, give expression to the opinion of the author by saying that this remedy will find no particular favour in cases of natural labour. For, suspension of labour-pains, or cessation of uterine contraction, is the usual consequence of the employment of the remedy, and the natural process of labour will, therefore, obviously, be interrupted by it. It is even possible that through the cessation of the efforts of uterine contraction, the occurrence of hemorrhage will be induced, and thus a troublesome and dangerous addition be made to the more ordinary risks of labour. The employment of ethereal vapour in natural labour will, therefore, probably be limited to those cases in which pains of remarkable severity occur.

There is yet one other remark to be made, supposing it be determined to use the vapour of ether in cases of natural labour:—may this remedy be placed in the hands of midwives?—the law has already given the proper answer to this question in the case of inferior surgeons and dentists; it has prohibited these from the employment of this remedy except with the concurrence of a physician. Yet the subject is of still higher importance in regard to midwives, but no enactment of a like nature has yet appeared to regulate the employment of this remedy in this its hitherto almost unknown, and but little practised application.

In answer to the second question stated at the commencement, it may be said that the true use of the vapour of ether in midwifery is limited to cases requiring operation; experience from all sides has spoken in favour of its employment in such cases. Here we have to deal with pains which are inflicted from without, and the removal of which, by the use of ether, is a great gain; and that they may be removed experience has shown: it has shown also that neither the mother nor the child is any the worse from the employment of this remedy, but, on the contrary, that the operation is rendered easier of performance by the softening and relaxation of the parts which are induced. The fear lest contractions of the uterus should entirely cease is also groundless, for the irritation which is excited in the uterus by the operation is sufficient to cause a renewal of its action. The temporary interruption of the contractions is, indeed, of considerable service to the operator; for the operation of turning is often rendered very difficult by these contractions, since, the liquor amnii having escaped, the uterus is firmly clasped around the child, and thus considerable obstruction is offered to the passage of the hand to the child's feet. But in such cases much is to be hoped for from the use of ether; and an operation which, under ordinary conditions, is difficult, will be thereby much facilitated. Like good effects will probably also result from the use of this remedy in cases when the placenta is retained after the birth of the child; but for the determination of this, experience is required. It may be necessary, however, to mention that this remedy must be employed with great caution, and with due regard to all contra-indications; among which should be included a diseased state of the lungs, and a plethoric condition of the system, which latter might be apt to lead to apoplexy. Moreover the remedy should not be employed in cases where there is a tendency to hemorrhage, and in which such tendency has manifested itself in previous labours; for by the use of it, the best guard against hemorrhage, namely, uterine contraction, is withdrawn; and, indeed, we require further observation to show us whether even a more serious kind of hemorrhage may not be induced by the inhalation of ethereal vapour.* All this shows that further observations are required before a right judgment can be formed regarding the circumstances under which this remedy may be employed even in cases of operative midwifery.

With regard to the observations which have been offered by others on this subject, the chief ones are noticed by the author: among others, those of Dr. Simpson, (the first who employed this remedy in a case of midwifery requiring operation,) of the German physician, Dr. Hammer, of Mannheim, and of the French physicians, Paul Dubois and Bouvier.—*Lond. Med. Gaz.*, June 1847.

* [The tendency which etherealized blood manifests to remain fluid after death renders it probable that the above-expressed fear will be found to be far from groundless.]

91. *Influence of Ethereal Inhalation on the Uterine Contractions.*—Notwithstanding the remarkable results obtained by MM. Paul Dubois, and Simpson, one important point with regard to the exhibition of ethereal inhalation in obstetrics has not yet been set at rest, viz.:—has ether the effect, as supposed by M. Velpeau, of suspending or diminishing the power of the uterine contractions so far as to facilitate certain obstetrical operations, such as the version of the fœtus. The following fact will further confirm the experience which we have already acquired, viz., that etherization neither suspends nor diminishes the resistance offered by the uterus to the introduction of the hand, and therefore does not facilitate version.

M. STOLTZ, of Strasbourg, was called to a primipara, æt. 24, of strong constitution, and in the sixth month of pregnancy. She received a fall on the first of March, and after suffering somewhat from pain in the abdomen and sacral region, she was taken in labour on the 5th of the same month. On examination, M. S. found the right foot and right arm at the uterine orifice: from the shape of the uterus, it was concluded that the fœtal head was to the left and inferior portion of the uterus, and the pelvic extremity to the right and upper side. The absence of a battlement showed the fœtus to be dead. M. S. determined to deliver by turning; the patient was placed in the required position, and ether exhibited with the usual results. Seeing that sensibility had almost entirely ceased, M. S. attempted the introduction of his hand into the vagina, when the woman immediately awakened up, and resisted him with loud cries; he then desisted for two or three minutes, until insensibility was complete. From that moment he was enabled to introduce his hand into the vagina, and accomplish the necessary operation without the patient at all resisting him, or complaining, although the passage of his hand through the vulva was not effected with greater ease than is usual in primiparæ. Having seized the foot which presented at the os uteri, M. S. attempted to extract the fœtus, but so powerful were the uterine contractions, that the thighs could not be disengaged. Having applied a noose upon the right foot, M. S. then introduced his hand again in order to seize the other foot still in the uterus; he had at first great difficulty in passing his hand through the os uteri, and even after having succeeded in this, he was unable, in consequence of the violence of the uterine contractions, to penetrate far enough into the uterus to reach the left foot; he found himself compelled to desist from this attempt, and at length with great difficulty succeeded in extracting the body of the fœtus from the uterus, but the os uteri still contracted so powerfully round the neck of the fœtus, that he could not proceed with the extraction. During the whole of this time the ethereal inhalation had been continued, and the patient had remained in a state of complete and uninterrupted repose and insensibility. The patient at length showed an inclination to vomit, and without much effort ejected a large quantity of frothy mucus; about a minute thereafter she woke up, and said she had dreamed that some one had attempted to deliver her, and had thereby caused her pain; she gradually recovered, and complained only of a slight uneasiness in the head and throat. The head of the fœtus remained all this time encircled by the os uteri: in about an hour uterine contractions were renewed, and a few slight extracting efforts sufficed to complete the birth of the fœtus.—*Monthly Journal of Med. Sciences*, July 1847, from *Gaz. Méd. de Strasbourg*, March 1847.

92. Dr. TYLER SMITH, in an interesting paper published in the *Lancet* (March 27th), investigates the action of ether in connection with the physiology of parturition. He points out the different parts taken in that process by sensation, volition, and emotion, and from this examines the applicability of ether to labour.

“What benefits can be conferred, what injuries hazarded, by the use of ether?” he asks, and then says, “pain and emotion may be obliterated; all, or nearly all, of shock which belongs to pain and mental emotion may be averted; but, at the same time, volition, and the salutary influence exerted by pain and emotion on the motor actions of labour, are withdrawn. In successful cases—that is, when the brain only was affected—parturition, as a reflex function, would not be interfered with. There remains to the woman, in its full intensity, all that portion of *shock* which depends on the spinal marrow and the ganglionic system. There are added, in some cases, the increased tendency to puerperal convulsions, and the collapse

described in the cases of Messrs. Nunn and Robbs as the effects of the ether itself, and which has also occurred in many unrecorded cases. The dangers, incurred by the use of ether in midwifery, would be that of convulsion, and of the meeting of the physical shock of parturition with the shock or collapse produced by the ether itself. Whenever this complication occurred, there would be considerable danger. Briefly, I may repeat, there is, on the one hand, the absence of pain and of painful emotions, with their attendant evils; on the other, there is the physical shock unaverted, the tendency to convulsion, and the possibility of dangerous collapse—a possibility which, in some surgical cases, has passed into fatal certainty.”

§ 5. *Present State of Opinion in regard to the use of Inhalation of Ether.*

93. It will, we think, be interesting to our readers to learn the present state of opinion in regard to the employment of inhalation of ether, and we have, accordingly, endeavoured to collect it, and to represent it fairly. We think this has not yet been done, and it is interesting, not only in a historical point of view, but may be important in contributing to aid the reader in forming his own opinion on the subject.

Dr. RANKING, in his Half-Yearly Abstract, remarks:—“The introduction of the inhalation of ether, for the purpose of annihilating pain in surgical operations, and of depriving even the dreaded process of parturition of its pangs, has not been exempted from the ordinary fate of novel propositions in medicine, although it must be allowed that the objectors to the value of this agent form the minority of those who have been led to reflect upon its applicability. Still there have not been wanting, in every locality, some over-cautious or over-timid persons, who are haunted with the idea of the danger which must attach to means so extraordinary, and who look upon an ether inhaler as almost a synonym for apoplexy or asphyxia. These individuals, however, as we have said, are few in number, and their opinions are, therefore, of little consequence as respects the estimation of the agent; the real danger to which it is exposed arises from the precipitate encomiums of its friends, and the reckless manner in which it appears to be made use of, without reference to, and by persons utterly incapable of judging of, the normal or diseased physical peculiarities of the patient.”

Mr. JOHN F. SOUTH, in a postscript to his edition of Chelius's Surgery, observes: “The avidity with which ethereal inhalation has been generally adopted, and apparently without consideration of the possibility of its indiscriminate employment being ever attended with danger, is one of the most remarkable circumstances connected with it. But, that it is not unfrequently accompanied with inconvenient and even dangerous results there can be no doubt.”

He relates some cases in which injurious effects were produced, and then remarks:—“I have thought it right to mention these facts, to put practitioners on their guard in the employment of ethereal inhalation, for I feel assured, that unless more cautiously employed than hitherto, it will not be long before many disastrous consequences will result. A medical friend of high standing, with whom I had some conversation, insisted on the propriety of subjecting the patient to some preliminary trials of the effect of the inhalation before employing it at the time of operating. With this opinion I fully concur, and I should certainly adopt it, if I made up my mind to try inhalation at all; but upon that point I am not decided, for I have considerable doubt of the propriety of putting a patient into so unnatural a condition as results from inhaling ether, which seems scarcely different from severe intoxication, a state in which no surgeon would be desirous of having a patient who was about to be submitted to a serious operation.

“It was suggested, with much appearance of probability, that a far more important benefit than even the prevention of pain would arise from the use of ether; that it must lessen the shock to the nervous system generally, and that the after-treatment would be greatly facilitated by the absence of constitutional irritation. But experience has not confirmed these hopes. A patient who recently underwent an important operation, which was performed with rapidity and skill while he was quite unconscious, gradually sank, and died in three weeks, although little blood had been lost, and there was no organic disease found after death to account

for the unfavourable termination of the case; there were two fresh effusions of blood beneath the arachnoid membrane. Another case, still more recent, terminated fatally within three days; the patient never rallied from the sedative effects of the ether, while, at the same time, the spasms in the stump of the amputated limb were unusually severe.

"In conclusion, I may observe that there are no operations in which the use of ether seems to be so decidedly *contra-indicated*, as in those for the cure of cataract; for, when skillfully performed, they cause hardly any pain, so that stupefying the patient is at least superfluous. But voluntarily to induce congestion in an organ, where inflammation, once set up, is so difficult to control, and where, if unchecked, it produces such deplorable effects, appears to be the height of imprudence. Yet all this risk has been run, and the non-professional public have been astonished to hear how quickly a cataract may be got out; the final results of the operations have not been so eagerly proclaimed."

Mr. BRAITHWAITE, in his Retrospect for January—June, last, states: "It is possible that when we are better acquainted with the kind of cases in which this agent may be safely used, that it may prove a valuable addition to operative surgery, and even in many medical cases; but at present we are strongly disposed to think that its value has been vastly over-rated. We know many eminent hospital surgeons who feel little disposed to rely upon it in future, and who assert that if they had occasion to submit their own persons to a surgical operation, they should prefer the endurance of the pain to the risk of the ether. In short, surgeons are not yet masters of the subject. It requires further investigation, and the cases more minute classification.

"At present, we find many objections, attributable perhaps to our ignorance of its minute effects, and the cases exactly fitted for it. Some of these objections we find excellently worded by the learned editor of the Medical Gazette.

"In the first place, it is impossible beforehand to fix the dose of vapour that will be required to produce given effects upon any patient. Then it is not always easy to ascertain when enough has been administered: we cannot rely on the state of the pupil, or the pulse,—perhaps the change in the breathing is a more certain sign.

"Again, we cannot predicate the form which the intoxication may assume,—whether that of coma, or excitement; the latter state would be an evil in the performance of any operation;—and in some,—hernia and lithotomy, for instance, a sudden movement of the patient might endanger his life.

"Unconsciousness of suffering is not always desirable, for we sometimes wish to know if nervous cords are unnecessarily touched.

"And besides all this, very serious consequences have already resulted from its use: an affection of the nervous system approaching apoplexy,—syncope,—dyspnœa,—and spitting of blood. Death also has followed its use in many instances; in some of which, as that of Mr. Nunn, in this country, and the two cases of M. Jobert, in France, the fatal issue has been attributed to the use of ether. It is probable that if the deaths were faithfully recorded, we should find that in many more instances, they were not from ordinary causes."

Again he observes: "There is no doubt that there have been numerous other cases of a very unpleasant, if not of a positively dangerous character, from the use of this remedy, which have never met the public eye.

"After careful observation, therefore, we cannot but think that the favourable impression on the minds of the profession, and of the public, has been produced, to say the least, prematurely, and without sufficient evidence and proper discrimination of the cases and constitutions subjected to its influence. And we will further state that it is the impression among many experienced men, that in a very short time, it will be but seldom used, if it do not fall completely into disrepute."

At a meeting of the *South London Medical Society*, April 15th, Dr. GULL read a paper on the effects of ether on the different classes of animals, and concluded with queries whether it was useful to abolish pain during surgical operation, whether this can be safely done by ether, and whether the presence of ether in the

blood modifies the healing process. This paper elicited the following opinions from Mr. Travers and Mr. B. Cooper.

Mr. B. Travers, Jr., remarked, that the proximate as well as immediate effects should not be overlooked, as he believed the effects of ether were progressive, and that a man having been under its influence might die in the course of five days as well as of twenty-four hours. He had known a limb five days after death smell strongly of the ether, the stump having become gangrenous. He believed it to be a poisonous and dangerous remedy, attended with the greatest risk, and requiring the most profound caution in its use.

Mr. Bransby Cooper, in reference to Dr. Gull's question "whether it was right in operations to alleviate or prevent pain, provided it could be done with perfect safety?" remarked, that pain was a premonitory condition, no doubt fitting parts the subject of lesions to reparatory action, and therefore he should feel averse to the prevention of it. In parts operated upon under the influence of ether, there was no muscular contraction, no retraction of the larger vessels, and the small ones continued bleeding; he alluded to a case of lithotomy under the influence of ether. The operating surgeon remarked that, with the exception of the flow of blood, it was like cutting through dead flesh; the parts fell, as it were, asunder, and the sensations were quite different on passing the finger into the bladder. Dr. Gull's paper had more than ever convinced him that it was a poison, and unless other experiments proved it harmless, he should give his decided opinion against its use.—*Lond. Med. Gaz.*, April 2, 1847.

The editor of the *Medico-Chirurgical Review*, April, 1847, after speaking of the enthusiasm which existed with regard to the inhalation of ether, both in the public and profession, observes:—"Excusable as this is in a matter of such momentous interest, we fear it has led to a too indiscriminate adoption and a too exaggerated estimate of the value of the remedy, and has certainly given rise to practices which are highly derogatory to professional dignity. The theatres of our hospitals have been made the scenes of operative display before crowds of 'fashionables, lords, princes, distinguished foreigners,' and the like, and the proceedings within their walls chronicled in the columns of the daily press with all the tact, exaggeration, and conventional phraseology of the penny-a-liners; who, we sincerely hope, will not be allowed to convert the *entrée* so injudiciously granted them upon the present occasion, into a precedent."

The editor of the *Monthly Journal of the Medical Sciences*, in his number for April last, remarks, "Since we last noticed this subject, although the inhalation of ether has been practised to a great extent, much of the enthusiasm which at first prevailed respecting it has been dissipated. The occasional unpleasant, and in a few instances even fatal effects which have resulted from its use, have caused a salutary check to the extravagant anticipations which were formed with regard to it. Further experience only can enable us to form correct notions of those circumstances which may render its application warrantable. In the mean time it is our intention to give a short summary of the novel facts which have been elicited in connection with etherization during the past month."

He further states that he is informed that Prof. Syme has abandoned the use of ether in his surgical clinic.

The editor of the *Dublin Quarterly Journal of Medical Sciences*, in his number for May last, states, "We regret to say, that our fears with respect to the general employment of this agent, contained in our last number, have, in several instances, been verified. Several deaths, caused either directly or hastened by the inhalation of the vapour of sulphuric ether, have lately been recorded, and the journals that were at first loudest in its praise have recently assumed a very cautious tone on the subject."

It is proper, before closing this article, to state, that in Boston, where the practice of exhibiting ether originated, it has been administered in a large number of cases, and is now habitually employed by several very distinguished surgeons and obstetricians, whose confidence in its efficacy and safety, we learn, continues up to the present moment unabated.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Report of Cases of Typhus Fever, observed at the Lazaretto, near Philadelphia. By F. W. SARGENT, M. D.

During the month of June, I had the opportunity of observing, at the Quarantine Station, several cases of "Ship Fever," as it is called. The following notice has been condensed from observations made at the time.

There were thirty-seven cases of fever in all, of which thirty-three were taken from one ship, "The North Star;" the remaining four were taken from two other vessels, two from each. The two latter ships sailed from Belfast and Londonderry respectively; having on board their full complement of passengers, generally in good condition, and pretty well furnished with provisions and other necessaries. The "North Star" sailed from Liverpool with one hundred steerage passengers. Very many of them excessively poor, and already suffering in health in consequence of the discomforts to which they had been subjected in Ireland, and also in Liverpool, whilst waiting for a passage. The bread-stuffs which were laid in for their consumption during the voyage, were of a very inferior quality.

The general impression on board the vessel, was, that one of the passengers, a woman, was sick when she embarked. This person was extremely poor, and had been compelled to remain in Liverpool many weeks, amidst a crowd of emigrants, in a very miserable condition. She remained sick from the time the vessel sailed, during the whole voyage, and was removed from the ship at the Lazaretto, in a state of great prostration, yet free from fever.

The ship sailed from Liverpool on the 7th of May. The first death occurred on the 17th of May, in the case of one of the children of the woman above mentioned. On the 29th, another child of the same woman died. On the 13th of June her two remaining children were also removed; the ages of the four, in the order above mentioned, were 4 years, 9 months, 2 years, and 6 years. In all eight persons died on the voyage.

With regard to the question of contagion, sufficient data could not be gained to afford any satisfactory conclusion. It is important to note, however, that the captain of the ship, both mates, the cook and seven of the crew sickened, either during the voyage, or immediately on reaching the quarantine ground, and all presented well-marked symptoms, such as were offered by the sick passengers. These men were all healthy and vigorous, as well fed and as comfortably provided for, as seamen generally are. Moreover, Dr. Jones, the regularly constituted Lazaretto physician, contracted typhus fever, while in attendance at the station upon some fever patients taken from on board ship, in May last. No case of fever has occurred among the nurses of the station.

The symptoms presented by the patients observed, were ascertained by careful and repeated inquiry of themselves and their friends, and by attentive observations at the bed-side. They may be divided into the symp-

toms of the disease in its forming stage, and those of the fully developed affection.

The disease was ushered in by chilliness, in many of the cases, perhaps in all. The numerical frequency of this symptom could not of course be ascertained precisely, because many of the patients, when they were first brought under my notice, were not qualified to give information on this point, neither had their earliest complaints been observed by others. In some cases repeated rigors were experienced; in others the sensation was merely of chilliness. Pain in the back and limbs was a frequent symptom, and in one patient, whom I had the opportunity of observing from the commencement of her illness, the pain in the sacral region was exceedingly severe, as much so as in very bad cases of small-pox;—this woman died. Without exception all the patients complained of headache; this was variable in intensity, sometimes very severe, as intimated on the part of the sufferers by the expressions “splitting,” “bursting,” &c., of the head; in other cases it was more supportable in its degree. The seat of the pain was not fixed; sometimes it affected the frontal, sometimes the superior, and sometimes the posterior region of the head. A marked degree of sleeplessness characterized the onset of the sickness in every case; in the instance of the captain of the ship, the want of sleep was so severely felt that he took every night, before reaching the quarantine ground, large quantities of laudanum; which, however, failed of its intended effect. In all the cases brought under my notice, delirium was a symptom present from an early period. Generally this was of a quiet, manageable character, the patients keeping their berths, and exhibiting their aberration only in random, unconnected talking, more or less obstinacy in refusing attention and assistance, aversion to their children or friends. Some, on the other hand, were with difficulty restrained from wandering about the ship, and from making a great deal of noise, &c. &c. The more active delirium was most marked at night. Loss of strength was also a notable phenomenon connected with this stage of the disorder: it was common as well among the previously robust and well-nourished sailors, as among the passengers. This prostration affected the mind as well as the body. The sick generally became utterly careless and indifferent as to their own situation and condition, and unsolicitous for their nearest friends. In other instances, where there was every disposition to the performance of accustomed duty, the mind seemed to have lost all power of observation, and combination of ideas, and was incapacitated, equally with the body, for exertion; thus the captain and the mates became entirely unable to calculate the position, or to lay down the course of the vessel.

More or less fever was observable almost synchronously with the first complaint, in those patients whom I saw at the beginning of their sickness. The pulse in the first period, beat from 90 to 100; soft, regular, of good volume—the skin was warm and moist; the tongue covered with a thin, moist yellowish fur, excepting at the anterior extremity, which was clean; the bowels were not disturbed at first; indeed, in all the cases, according to the most accurate information I could gain, the habit was costive at the commencement; the abdomen was in every case retracted, rather than full; nausea and vomiting were rarely complained of; the thirst was generally marked, though not insupportable; the appetite was entirely lost; the respiration was somewhat accelerated, in proportion to the frequency of the pulse, and the heat of skin; cough was an exceptional symptom in this stage, and when present it was very slight and dry, and unconnected with

any appreciable rale. Bleeding at the nose occurred in four cases only, of the thirty-seven; at this period of the disease, the eye was clear, but dull and heavy; the cheek flushed, as in other febrile affections, acquiring at a later moment the appearance common in typhus fever; the sense of hearing was slightly, if at all, obtuse.

The disease, when fully developed, was especially marked by increased oppression of the intellectual and sensorial functions. The mind became much more sluggish and dull; there was a more or less continued disposition to sleep during the day, frequently interrupted at night by delirium, generally of a non-violent character; muttering; the eyes suffused and void of animation; the cheeks covered with a dusky red flush, and the whole expression resembling that of a person very much intoxicated. The hearing was obtuse, sometimes very much so, accompanied generally by confused sounds, as of rumbling, or rolling, and the like. In one case only were there convulsions; but, with few exceptions, all had subsultus tendinum; in most this involuntary motion was confined to the wrist and fingers; in some, the muscles of the face, especially those about the mouth, were in a state of almost constant agitation. This latter symptom (agitation of the muscles of the face,) is properly regarded as a very unfavourable one; of the three patients who presented it in the most marked degree, two recovered. The convulsion, in the single case alluded to, occurred on the ninth day from his first complaining, and lasted but a very few moments; there was a slight twitching of the muscles of the face, both sides equally, the eyes became fixed, and the limbs perfectly rigid; this did not recur. But for the succeeding twenty-four hours, he presented some singular symptoms; when asked to protrude his tongue, he replied that he could not; when asked any question, which would oblige him to converse, he replied that he could not speak; he passed the entire twenty-four hours resting upon his left elbow, gently moving his body backwards and forwards, while in this position, and could not be induced to lie down. This patient recovered very speedily, being dressed and walking out on the sixteenth day from the commencement of his illness, on the tenth from his admission into the hospital.

The skin during this period became dry and hot; the calor mordax; the pulse increased in frequency, becoming at the same time more feeble, sometimes undulating; its frequency was variable; thus, of 15 cases in which it was noted, its greatest frequency was in each case respectively, 104: 98: 112: 80: 104: 128: 112: 100: 116: 105: 120: 124: 112: 140: 124. In two of the cases a remarkable diminution in the frequency of pulse occurred during convalescence; thus, in one patient whose pulse had been as high as 112, it fell during convalescence to 36 per minute; in another, from 80 to 42; in these two cases the pulse beat regularly throughout the illness; in a few others it became irregular during convalescence; and in others again some irregularity occurred only on the approach of death. The action of the heart was carefully noted: the impulse was found to be feeble in every case; both sounds were distinctly heard, without unnatural murmur. The respiration was more frequent than in health, but not more so than might have been expected considering the more frequent action of the heart; in only four out of thirty-seven cases, was there any abnormal sound audible in the respiratory movements. In one there was always mucous rale over the lower part of the right lung, from the root downwards, without bronchial respiration, or increased vocal resonance; the percussion was appreciably more dull than on the left side; the period

of the disease in which this condition occurred could not be determined, from the want of any accurate knowledge as to the date of seizure. In two cases the same condition was first appreciable at the close of the second week. In the fourth instance,—a loose mucous rale existed about the root of the lungs, unaccompanied with dullness ; this also appeared at the close of the second week.

In one case only was there distension of the abdomen ; it was generally of about the same degree of fullness as is common in health ; in many cases, however, it was decidedly retracted. In one case only was there any perceptible sensation of gurgling upon pressing in the right iliac region. Of 32 cases, 19 had no diarrhœa ; of these latter 4 were costive. The remaining 13 patients had from four to eight passages daily ; the evacuations being thin and yellowish, free from blood. The urine in all was small in quantity, of a reddish-brown colour, emitting a decided ammoniacal odour upon standing a short time. In four patients there was retention of urine, requiring the use of the catheter. The tongue was dry, in many cases covered with a dark brown incrustation and fissured ; the teeth and gums at the same time covered with sordes. The surface of the body was in every case, excepting one, abundantly covered with petechiæ ; this exceptional case presented in a very marked degree all the other symptoms of typhus fever. The petechial spots were of a purplish-red colour, becoming darker a few days after their appearance than at first ; beneath the surface, and unaffected by pressure upon it ; very numerous ; generally circular in form, but sometimes oval, varying in size from a line or a line and a half to a fraction of a line in diameter. There was also another sort of eruption, consisting of spots of a much lighter hue than the first, sensibly elevated, in most instances ; generally oval in shape, but sometimes circular, and again having no definite form ; in size varying from a fraction of a line to two lines in diameter ; partially, sometimes wholly, disappearing under pressure. Both of these varieties were diffused over the entire surface, excepting the face and forehead, but were most abundant on the abdomen ; the paler variety was more numerous than the other. In six cases of which I had the opportunity of witnessing the whole course, from before the appearance of the eruption, this was first distinguishable on the eighth day in one case ; on the sixth, in two ; on the seventh, in one ; on the fourth, in two. The two varieties appeared simultaneously, but the paler receded first ; the precise period of its disappearance I am unable to state ; it probably took place, however, in the early part of the third week. In addition to these smaller spots, there were in a few cases large purple blotches, superficial stains of the surface, in which the circulation was extremely languid. Of 32 cases, only three had sudamina. In one of these their time of appearance could not be determined ; they were very numerous over the neck and upper part of the chest anteriorly :—in another instance they appeared in the early part of the third week ; they were not abundant, and were confined to the breast :—in the third, they appeared for the first time on the eleventh day upon the breast ; had all vanished in the course of twenty-four hours, and again reappeared on the fourteenth day, very numerous and very large, and were diffused very generally over the trunk and extremities, being most abundant, however, over the abdomen. The peculiar odour exhaled from the body, noticed as existing in cases of typhus fever, was appreciable in the first period of the disease in most of the patients, and to a greater degree in the fully developed affection. At no time, however, and in no

instance was it so very heavy and offensive, as it has been found to be in many epidemics of typhus fever.

There was more or less bleeding from the nose in 11 patients out of 32, during this second period; in one of these there had been previous bleedings; it recurred on the eighth day of the disease. The precise date of the bleeding could be ascertained only in one other instance; in this it occurred on the ninth day. The hemorrhage in all, excepting one instance, was very slight, and should rather be called an oozing of a thin pale-red fluid; in one case, however, it was very abundant, and was arrested with great difficulty, and only after the individual had fainted from loss of blood; this occurred before the ship arrived at the quarantine ground; the patient eventually recovered. In a few cases a similar oozing appeared to take place from the gums.

I can only state the period at which the change in the degree of illness occurred, in five patients, constituting what has been termed, herein, the second period; the other patients came under my observation after this stage was fully developed. Considering this stage as characterized particularly by obtuseness of the cerebral functions, it was developed in one case on the 8th day; in one on the 9th; in two on the 7th; in one on the 5th.

The ages of the patients were as follows: under 6 years, 3; from 6 to 20, 5; from 20 to 30, 17; from 30 to 40, 7; from 40 to 50, 5. The duration of the disease, from the time of sickening until the patient was able to walk about, free from ailment, was, as nearly as could be ascertained, in fourteen cases, as follows: 13 days in 3 cases; 14 in 1; 15 in 2; 16 in 3; 18 in 1; 19 in 1; 20 in 1; 21 in 1; 22 in 1. From the time that the patient became entirely convalescent, free from fever, &c., until he was sufficiently strong to be dressed, and to walk about the wards, an interval of only 3 days elapsed in 9 cases; of 4 days in 3; of 6 days in 2. Death occurred in one case on the 7th day of the illness; in three on the 10th; in one on the 17th.

The degree of emaciation was very moderate in all the patients who recovered; the digestive powers were speedily restored to their full force, and the natural embonpoint and strength quickly regained.

The appearances after death in four subjects which were carefully examined, were the following:

Externally.—Moderate emaciation; rigidity of limbs; large purple patches at the flexures of the limbs, and on the inferior parts of the surface; no sudamina; in three the deep purplish-scarlet circular petechial spots remained more or less numerous, and diffused over the trunk and limbs, the lighter-coloured spots having disappeared; the abdomen was retracted in all. The eyes were sunken, and the features pinched.

Contents of Cranium.—Cerebrum of excellent consistence. Cerebellum very slightly softened in three of the subjects. The venous sinuses were moderately full of a dark-coloured blood, without coagulum; the ventricles contained, in each case, from 3j to 3ij of serum, slightly stained; no injection of membranes, and no adhesion of them to the surface of the brain. A freshly cut surface of the brain exhibited not more than the usual number of bloody points.

The *Heart* in all had a somewhat flabby, soft feel, though the consistence of the walls was not appreciably diminished. The valves in all were healthy; the lining membrane of the cavities of the large trunks was stained; the blood was dark-coloured and fluid, one only containing a coagulum, which was small, very soft, and pale. In all, the size of the

heart was normal. The pericardial sac contained a few drachms of slightly-reddish serum, free from flocculi; the lining membrane unaltered.

The *Lungs*, in two instances, were perfectly healthy, excepting that some degree of congestion existed at the inferior posterior part; in one of these, a few delicate, pale bands of lymph were stretched across the right pleural cavity, evidently of old formation; in each of these cases, the pleural cavities contained between $\frac{3}{8}$ ss and $\frac{3}{8}$ j of stained serum, without flocculi. The bronchial membrane was stained correspondingly with the tissue proper of the lungs; this stain was uniform, dark-coloured, without abrasion or softening of the membrane. Death took place in these two instances on the tenth, and on the seventh day. In the other two instances, the right lung in each was slightly softened in the lower lobe, (which, however, contained air,) and deeply stained. The cavity of the right pleura was, in each instance, traversed by bands of lymph, pale in one, in the other stained, in both very firm; $\frac{3}{8}$ j of stained serous fluid existed in each; in one of these latter instances, the liver was firmly and closely attached to the diaphragm, by false membranes of old formation; in this case, death occurred on the seventeenth day. The bronchial glands were unaffected.

The *Liver* was not appreciably altered in any case.

The *Spleen* seemed of good consistence in all—tearing with a granular surface, and resisting pressure about as well as the spleen usually does. Its size varied;—in one instance, it measured 3 by $3\frac{1}{2}$ inches; in one, the dimensions were $2\frac{1}{2}$ by 4 inches; in a third, 3 by 5; in a fourth, 4 by 7 inches. The colour of the organ was bluish, with a perceptible tinge of green.

The *Kidneys* felt soft and flabby, but their consistence did not appear to be really diminished.

The *Bladder* offered no appearance of disease.

The *Stomach*, in three of the four subjects, was pale; in one, it was deeply stained at its greater curvature. In none was there any softening or abrasion of the mucous membrane; in two, this was covered with a thick, viscid semi-fluid matter of a yellowish colour. The organ was at a medium degree of distension in all.

The *Intestinal canal* in one instance was uniformly stained from the lower extremity of the jejunum to the transverse colon; there was no softening of the mucous membrane in this case, nor abrasion, nor inflammatory injection, simply, a dark-coloured stain; the larger veins were turgid. The isolated follicles were visible, scattered here and there throughout the length of the small intestine, and less numerous in the upper part of the colon. The agminated follicles were very apparent in the lower half particularly of the ileum; the last three feet of the small intestine contained five of these patches of Peyer. The mucous membrane covering them was stained, as elsewhere, and the tissue of the glands themselves apparently slightly reddened also; the lining membrane of the canal was not very sensibly elevated at these points, nor abraded at all. Some of the mesenteric glands, near the lower extremity of the ileum, were enlarged and injected, of a reddish-brown colour; most were very small; a few measured from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch in the long diameter. No softening in any instance.

In the other three subjects, the mucous membrane of the intestinal canal was pale. No turgescence of the large veins. In two, the glands of Peyer could not be seen at all with the naked eye; in the third subject, they were numerous, their outlines well marked, and the bluish dotted

appearance within; no thickening, abrasion or discoloration of the mucous membrane covering them. In one the isolated follicles were not perceptible; in the other two, they were sufficiently numerous. In these three instances, the mesenteric glands were pale, and the largest scarcely the size of a pea. The large intestine exhibited no evidence of inflammation or softening, or any disease.

The serous membrane of the abdomen presented no departure from its ordinary healthy condition, excepting in the single instance already mentioned, in which the opposed surfaces of the liver and diaphragm were adherent.

The treatment consisted in the administration of tonics and stimulants, with the use of calomel in very small doses, combined with ipecac. or Dover's powder, or opium alone. The preparations of Peruvian bark, and chiefly sulphate of quinia, were the tonics made use of. Punch, carbonate of ammonia, brandy, &c., were the stimulant remedies most resorted to. As local applications, I found frequent cold sponging of the surface of great service, as were likewise blisters in some cases; also dry and wet cups, and stimulating lotions. The diet consisted of farinaceous articles, broth, essence of beef, and, upon convalescence, a mixed animal, and vegetable regimen.

Operations for Femoral Aneurism. By CHARLES BELL GIBSON, M. D., Prof. of Surgery in the Medical Department of Hampden Sidney College, Richmond, Va.

Patrick M'Vastry, æt. 45, a prisoner in the Maryland Penitentiary, presented himself to me, on the 25th of June, with a large tumour occupying the greater part of the inguinal triangle (Scarpa) on the inner and anterior part of the left thigh. Its true nature was immediately discovered, and the patient put in preparation for an operation. From the close approximation of the aneurism to the crural arch, it was deemed expedient to tie the external iliac artery, and after a week's preparatory treatment, consisting in the regulation of diet, and attention to general health, I performed the operation on the 2d of July, assisted by my friend Dr. Alfred Baker.

The patient being placed on a narrow table, with the shoulders elevated, an incision three inches and a half long, was made about an inch above and parallel with Poupart's ligament, commencing opposite the anterior superior spinous process of the ilium, and ending a little above the external ring.

The first cut divided the skin and superficial fascia, and exposed the tendon of the external oblique muscle, which was next divided to the same extent on the director. The lower margins of the internal oblique and transversalis, were now formed and divided to the extent of three-quarters of an inch, upwards, when the fascia transversalis was exposed and torn with the finger nail, and the artery then discovered on the inner border of the psoas muscle, covered by the sheath it receives from the fascia iliaca.

The director was here used to rupture the sheath, on the inner side of the artery, and detach it from the vein, and when the whole circumference of the artery was thus cleared, the aneurismal needle armed with the ligature was easily passed around it, from the inner side above the epigastric.

The ligature was now drawn firmly and tied, and the pulsation in the tumour instantly ceased. The divided internal oblique and transversalis muscles were carefully adjusted, the wound sponged clean, and the edges

brought together by the interrupted suture and adhesive straps, leaving merely space for the passage of the ligature.

On the third day after the operation, the wound was examined and union found to have taken place by the first intention, with the exception of about a quarter of an inch around the ligature. The sutures were cut out and the straps retained. A slight discharge had stained the compress. The wound was dressed daily. On the twenty-first day the ligature was drawn away with a very slight effort, and the opening left, gradually contracted and healed.

About ten days after the operation, the patient drew my attention to another tumour about the middle of the femoral artery on the opposite thigh, also aneurismal, and the size of a large walnut. I tied the femoral artery on this side, in its upper third, in the presence of Dr. Baker, Dr. Brockenborough, of Richmond county, Virginia, and Mr. Crittenden, a student from Virginia. The pulsation ceased immediately on the application of the ligature. The wound also healed by the first intention, and the ligature was detached on the eighteenth day.

The patient is now entirely well, and almost strong enough to resume the usual labour of the convicts.

BALTIMORE, *August 20th*, 1847.

Case of Abscess of Bladder.—By LAURENCE TURNBULL, M. D., of Philadelphia.

On the morning of the 17th of April, I was desired to visit an old gentleman aged seventy-seven, who was said to be suffering from gravel, and with a request that I would bring my instruments. He had neglected for several hours to evacuate his bladder, and when he endeavoured to do so, found he could only pass a few drops with great pain. I learned from him that he had suffered previously from similar attacks, and had been relieved by the introduction of the catheter, but no means had been used to prevent a recurrence of the difficulty.

After placing him in a warm hip bath, and giving him an enema of starch $\mathfrak{z}\text{ij}$, laudanum $\mathfrak{z}\text{ss}$, I endeavoured to introduce a silver catheter made a little longer than usual; but without the use of improper force, could only pass it up to the prostate gland, which I found to be enlarged. I therefore withdrew it, and sent for an eminent surgeon, since diseased. This gentleman made a trial with a gum catheter, but without effect, and finally forced the silver catheter through the projecting part of the gland into the bladder. A considerable portion of urine was drawn off of a dark red colour; the first portion being mixed with blood, having a strong ammoniacal odour. Another anodyne enema was then administered, the bowels to be subsequently moved with castor oil, and mucilaginous drinks freely given. He passed a comfortable day, and did not suffer much until 9 o'clock in the evening, when he was relieved and slept part of the night, but suffered the same distress at 5 o'clock next morning, when I drew off the urine, leaving a gum catheter in the urethra for two days, but it did not restore the tone of the bladder. The urine now became charged with a tenacious mucus of an alkaline character, so thick as to be with difficulty poured from one vessel to another. He was then ordered to drink freely of an infusion of Pareira Brava, also a suppository of two grains of opium, and five grains of extract of hemlock, to be given at night. He rested better as it soothed the gland, and relieved the hemorrhoidal irritation of the mucous membrane of the rectum. The alkaline mucus soon

ceased to flow, but for nearly three weeks, it was necessary to introduce the catheter three times a day. His pulse was normal and appetite good, but towards the beginning of the fourth week, he suffered from loss of appetite, with rigors, and great uneasiness from the urine, although much reduced in quantity. As soon as a few ounces were collected in the bladder, it caused the most violent spasms with intense pain, making him scream with agony; these paroxysms lasting with intermissions of from fifteen to twenty minutes, except while under the influence of opium, and even then the peculiar twitching of the muscles of the perineum and abdomen was observed. The pulse now became small and intermitting, tongue brown and cracked with the quantity of urine still decreasing. He complained much of internal heat, and his only desire was for ice, allowing the abdomen the slight covering of a sheet. These symptoms were accompanied with great restlessness, and occasional vomiting of a dark substance of a very disagreeable odour. His intellectual faculties continued unimpaired, until he became comatose, the two days before his death, which took place at 9 o'clock, on the evening of the 17th of May. I am indebted to the politeness of Prof. Pancoast, in being present at the post-mortem, the bladder being now in his possession, in the Museum of Jefferson Medical College.

Post-mortem twenty-four hours after death.

Upon examining the body externally, there was a hernial tumour, and a hydrocele was found on the left side, from which he had suffered for several years. Upon opening the peritoneal cavity, adhesions were found, and the intestines were glued together with freshly effused lymph, and their coats injected, forming a true case of acute peritonitis. Upon raising the intestines, we found that a large portion of omentum was down in the hernial sac, being attached to the walls of the abdomen by the pressure of a truss. Upon removing this, and raising the bladder, there was a quantity of pus found within the pelvic cavity, of a dark, grumous character, occasioned by the opening of an abscess, situated upon the summit of the bladder. There were also three smaller abscesses on the lateral surface of the organ, communicating with its cavity, and a much larger one on the anterior portion of the prostate gland. There was also an opening, like that made by a catheter, through the third lobe of the prostate, which projected into the cavity like a nipple. Posterior to this, in a pouch, there was a large portion of lymph, partly organized, and imbedded in which was a mass of white particles of phosphate of lime, forming a kind of mortar. The whole length of the bladder was about five inches and a half, and its width four and a half; the cavity was capable of containing from three to four ounces of urine. Its walls were half an inch in thickness, and the prostate gland, on its lateral side, was two inches and a half long, and two and a quarter in breadth; being about eight times the size of the gland when healthy. The kidney of left side was very vascular, and the papillæ were ossified upon their margins. There was also a serous cyst upon its surface, not connected with the internal portion of the kidney. The right was vascular, but not ossified, and the ureters very much inflamed in their whole course. The spleen and liver were normal, but the splenic artery was ossified, and crackled under the fingers.

DOMESTIC SUMMARY.

On the Effects of Blisters on the Young Subject.—By JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of New York.

"The first peculiarity attending the operation of blisters on the young subject is," says Dr. Beck, "*that they produce their effects in a shorter time than they do in the adult.*" This is a fact well known to every practitioner. While in the adult they do not produce their effects until from eight to twelve, or even more hours have elapsed, in the child, the same takes place in from two to six hours. In this respect there is a striking difference between blisters and most other remedies. Emetics and cathartics, for example, do not appear to act with any more rapidity on the child than they do on the adult. Now this fact, of the more prompt action of this class of agents upon the child, although a simple one is, nevertheless, one of great importance, and one which should be continually borne in mind. It has a practical bearing, not merely upon the mode of conducting the process of blistering in young subjects, but also upon the use of it in their various diseases.

"The second peculiarity is, *that the local inflammation produced by a blister is greater in the young subject than in the adult.*" The reason of this is obvious. In infancy, the skin is more delicate in structure, has greater vascularity, and a higher degree of sensibility; all circumstances favouring the development of greater inflammation. The local impression, accordingly, made by a blister, is not merely more rapidly developed in the young subject, but it is also more intense.

"The third peculiarity is, *that in young subjects blisters are more apt to be followed by the injurious consequences of inflammation, such as ulceration, gangrene, and even death.*" Numerous and melancholy instances of this are to be found on record. Dr. Ryan, speaking of the use of blisters in children, says, 'I have seen a blister on the chest followed by sloughing, and an aperture form over the epigastrium, which exposed the subjacent viscera.*' Dr. Thompson states that he 'has seen gangrene and death follow the application of a blister on an infant.†' Dr. North states that he has 'twice known infants destroyed in consequence of the sloughing of blisters, the progress of which could not be arrested.‡' Professor Chapman remarks, that in children a blister 'sometimes induces gangrene, as I have witnessed in two or three instances.§' My friend, Dr. W. C. Roberts, informs me, that he has met with two cases in which children sank under the effects of blisters. Numerous other facts of a similar character, might be adduced to show the disastrous effects which sometimes result from the application of blisters to children; and to the minds of many physicians it constitutes a serious objection to their use in their diseases. Dr. Armstrong says, 'I have a great dread of the application of blisters to children, on account of what is called the local and constitutional irritation.¶' Now these occurrences may and do take place also in the adult, but they are comparatively rare, and only under very peculiar conditions of the system. In infants, on the contrary, they are by no means uncommon. In any child, however healthy, they may occur from the simple cause of their being left on too long. They are more likely to take place, however, in certain conditions of the system or of the skin itself. Thus, for example, in cases where a child is greatly emaciated, or the constitution broken down from various causes, the inflammation of a blister is very apt to become unhealthy in its character, and to be followed by injurious consequences. Then again, where the skin itself is in a diseased state, it is much more likely to happen than in the healthy conditions of that surface.

"The fourth peculiarity is, *that the constitutional excitement produced by blisters is generally greater in young subjects than in the adult.*" That this must necessarily be so, is obvious. In all cases, the general excitement must be in proportion to the

* Manual of Midwifery, &c. By Michael Ryan, M. D., p. 476.

† Materia Medica. By Anthony Todd Thompson, M. D. Vol. ii., p. 535.

‡ Practical Observations on the Convulsions of Infants. By John North, p. 202.

§ Elements of Therapeutics, &c. Vol. ii., p. 28.

¶ Lectures, p. 362.

degree of local irritation, and the sensibility of the patient's system. If so, the general vascular and nervous excitement produced in the child by a blister, must, as a matter of course, be greater than in the adult. So powerful, indeed, is the impression thus made sometimes, that convulsions have been produced from this cause. Dr. North says: 'I have frequently seen very severe paroxysms (of convulsions) brought on in consequence of their injudicious and unnecessary application.*'

"From the whole of the foregoing it is evident, that blisters are much more powerful in their agency upon the young subject than upon the adult. They operate with more rapidity—cause a greater degree of local irritation and constitutional excitement—and their operation is frequently followed by consequences which rarely occur in the adult.

"If such be the case, it appears to me that some conclusions may be drawn of no inconsiderable practical importance

"1. If blisters are more powerful in their action upon children than adults, then it would seem to follow that they may be rendered more efficient as a means of cure in their diseases. And such appears to me to be really the fact. In all cases where their revulsive agency is required, and where they are properly applied, it has struck me that more decided benefit has resulted from their use in children than in adults, and that, too, under circumstances as nearly similar as they well could be. Besides acting more powerfully, the rapidity of their operation in children gives them a great advantage in many cases. We all know that one of the great objections to a blister in the adult, sometimes, at least, is the length of time which it takes to produce its effects. In a child, this is in a great measure obviated, and we have in a blister not merely a powerful, but a comparatively speedy counter-irritant. As remedial agents, therefore, in the diseases of children, it seems to me that they ought to hold a high rank. I am aware, that by some an opinion entirely the reverse of this is entertained. Mr. North, in his valuable work on the Convulsions of Infants, states that he thinks, that except as stimulants in depressed states of the system, blisters are altogether objectionable in the diseases of children. As revulsives in cases of local inflammation, he regards them as having gained a character which they do not merit, and that, in fact, they do more harm than good. On this subject, he says, 'the period at which we apply blisters in local inflammatory affections, is not to be forgotten. We first subdue the severity of the disease by other and appropriate remedies, and when it is upon its decline, when, in all probability, the unassisted powers of nature would successfully perform the remainder of the task, a blister is applied. The patient gets well, notwithstanding the additional pain thus inflicted; and the fortunate result of the case, which is really to be attributed to the measures previously employed, is said to be owing to the good effects of counter-irritation, &c., and the blister gains a character to which, in point of fact, it has no claim.†' Now all this may, no doubt, be true in some cases, but that it is so generally, can hardly be admitted. It should be recollected, that in the treatment of local inflammations, blisters are only auxiliary remedies. Of themselves, and alone, capable of doing but little, and yet, when co-operating with other agents, such as blood-letting, &c., exceedingly powerful and valuable. Every one knows that there are periods and conditions in the career of inflammatory complaints, when bleeding and other reducing remedies have been carried to the fullest extent deemed advisable, and yet sufficient disease may remain, if not to destroy life, yet to render convalescence tedious, or to lay the foundation of subsequent chronic disease. This, of course, it is all-important to obviate. Now it is just under this condition of things, that blisters come in with great effect, and frequently break up completely the remaining vestiges of disease, and in this way I look upon them as remedies, acting with more power and efficiency in children even than in adults.

"2. From the fact of blisters being such powerful agents, and especially from the fact of their being so liable to be followed by dangerous consequences, more caution is required in their use in children than in adults. Important and valuable as they are and may be made, if properly used, their indiscriminate application

* Observations on the Convulsions of Infants. By J. North, p. 209.

† Ibid., pp. 205—6.

cannot be too much reprobated. Just in proportion to the good they are capable of accomplishing under proper circumstances, is the evil which results from them if heedlessly or injudiciously resorted to. It is to be feared that this is not always borne in mind as it should be. As a general rule, they should never be resorted to, especially in very young children, unless some decided benefit is anticipated from them.

"3. The mode of conducting the process of blistering in a young subject, is a matter of greater nicety, and should call for the utmost care on the part of the practitioner. As one of the principal causes of gangrene is the leaving the blister on too long, this is a point which should be specially attended to. To many, this may appear a small matter, but it is really one of great moment, and in relation to which, I am sorry to say, that the directions given in many of our practical works are so discordant, as to be very poor, if any guides to the young practitioner. By way of illustration, I will quote a few of them. Dr. Armstrong says, 'from twelve to sixteen hours is generally sufficient for the application of the blister in adults, and half that period in children.'* Dr. Williams says, that 'to avoid gangrene in children, it is advisable never to allow the blister to remain on more than six hours.'† Dr. Dewees states that 'in children, the blister is frequently found to have performed its duty in eight hours, and very often in six. It should, therefore, always be examined at these periods, and dressed, if sufficiently drawn; if not, it should be suffered to remain until this take place.'‡ Evanson and Maunsell say, 'in no instance is the blister to be left on more than a few hours (from two to four)—not longer, in fact, than until the skin is reddened, when vesication will follow; but this result should not be waited for, as attendants always will do, unless the most express directions to the contrary be given.'§ Neligan directs, that, as a general rule, in infants and young children, blisters should only be left on until redness of the surface is produced, when the application of a warm poultice to the part will cause vesication.¶ Ballard and Garrod remark, that in children a blister should not be allowed to remain on longer than to produce redness of the surface; and they add, 'in very young infants, it has appeared to us doubtful whether even redness should be permitted to occur before its removal.'¶ The foregoing is a sample of the discrepancy of opinion in relation to a most important point of practice, and one confessedly too, not unfrequently involving the life of the young subject, as advanced by authors of the highest respectability, and who may be supposed to exert a wide influence in guiding the practice of young beginners in our profession. The fact is, and this perhaps may account somewhat for the difference of opinion just noticed, that no positive rule can be laid down in relation to the precise time that a blister should be left on a young child. From the original differences in the sensibility of the skin in children, the period must necessarily vary, and the only safe general rule is, to be governed by the actual effect produced. For this purpose, the blistering plaster should be raised at suitable intervals, and the state of the skin observed. And the safe plan is, according to the directions of some of the authors quoted above, to remove the blister as soon as the surface appears uniformly red, and then to apply a soft poultice. In most cases, this will be followed by suitable vesication, while any injurious consequences will be averted."

[Dr. Beck reprobates the practice of covering the blistering plaster with dry fly-powder, and speaks favourably of the method of dressing blisters recommended by Dr. MacLagan. (See this Number, p. 452).]

"4. To obtain the good and avoid the evils of blisters, it is evident that a nicer

* Lectures, &c. By John Armstrong, M.D., p. 362

† Cyclopædia of Practical Medicine. American edition. Vol. i., p. 529 Art. Counter-irritation.

‡ Practice of Physic. By Wm. P. Dewees, M.D., p. 28.

§ A Practical Treatise on the Management and Diseases of Children. By R. T. Evanson, M.D., and H. Maunsell, M.D., p. 107.

¶ Medicines, their Uses and Mode of Administration. By J. W. Neligan, M.D., p. 202.

¶ Elements of Materia Medica and Therapeutics. By Ed. Ballard, M.D., and A. B. Garrod, M.D., p. 457.

discrimination of the conditions of the system, is necessary in the use of this class of agents in children than in adults. Long experience has established the fact, that it is only under certain states of the system, that blisters can be used with any prospect of advantage. If this be true in the adult, it is doubly so in the young subject, and any mistake in this respect is much more likely to be followed by injurious consequences in the latter than in the former. Now the conditions which influence the effects of these agents, are the state of the skin, and the state of the nervous and vascular systems. With regard to the skin, it may be laid down as a general rule, that when blisters are used as revulsives, the part to which they are applied should be, as nearly as possible, in a state of perfect health. In this state, the irritation of blistering may be established even in a child with comparative safety. On the contrary, when the skin is in a morbid state, ulceration and gangrene are by no means unusual occurrences. All this is occasionally illustrated in scarlatina and measles. Mr. Pereira mentions that he has seen 'two instances of death from the gangrene caused by applying a blister after measles.* My friend, Prof. Dunglison, in his valuable work on *Materia Medica*, states that he has seen 'several cases of death manifestly caused by the use of blisters in scarlatina and measles.† Other facts of a similar character might be adduced, but the preceding are sufficient to show the tendency which there exists in this state of the skin to take on unhealthy inflammation. And the reason is to be sought for in the changed condition of the skin. During the febrile stage of these diseases, the skin is preternaturally injected and excited. As soon as the fever subsides, and the eruption recedes, the skin is left in a state of debility—a state in which, as we all know, inflammation is very likely to terminate unfavourably. I hope it may not be inferred from the preceding, that I mean to express the opinion, that blisters ought never to be used in such cases as measles and scarlatina—but the possible occurrence of such consequences, ought to make us exceedingly cautious about the manner of using them, and, indeed, ought to deter us from using them at all, unless under a manifest necessity. In every case, therefore, before applying blisters to young children, the condition of the skin ought to be attended to.

"With regard to the state of the system, this is even still more necessary to be inquired into. Indeed, this is all-important, if we hope to realize any of the expected benefits from these agents. Now there are two states of the system almost equally unpropitious to their use—and these just the reverse of each other. The first is that in which high inflammatory excitement is present. That this is unfavourable to the legitimate operation of a blister as a revulsive, is obvious, if we reflect for a moment upon the effects of this agent. These are, local irritation and general excitement. Now, in all cases where an internal inflammation exists, the difficulty of resolving it by any means, will be proportioned to the degree of general excitement accompanying it. If a blister be applied where this general excitement is already very great, one of the necessary consequences will be, to augment this so greatly as to counteract, in a greater or less degree, according to circumstances, the beneficial effects of the blister as a revulsive. Under this condition of things, the internal inflammation will be aggravated instead of abated, in consequence of the increase of general excitement. Hence the fact has been generally observed, that if blisters are applied in the early periods of inflammatory complaints, or before suitable evacuations have been resorted to, they frequently do more harm than good. They merely add fuel to the fire.

"On the other hand, a state of great constitutional exhaustion and emaciation is also unfavourable to their operation. The reason here, however, is entirely different from that in the preceding case. The danger here is that from the impaired state of the vital energies, the local inflammation of the blister may be followed by ulceration, gangrene, and death. In the use of blisters, therefore, both these extremes should be carefully avoided. With regard to the condition most propitious to their use, it is that in which the general excitement is rather below than above the natural standard. When this is the case, there is less danger from any increase of excitement, while the system is in the state most favour-

* *Materia Medica*, vol. ii., p. 775. American edition.

† Vol. ii., p. 219.

able to the transfer of irritations from one part to another. Now all this is applicable to the adult, and we can easily see how much more so it must be in the case of the irritable and sensitive infant.

"5. In the use of blisters in children, especial reference should be had to the peculiarities of their temperament and constitution. This is more important, perhaps, than it may at first sight appear. Every practitioner must have observed the extreme suffering which adults sometimes undergo from the irritation of blisters. In nervous and irritable habits, I have myself seen a state of things thus induced, little short of frenzy. In children of nervous temperaments, all this is much more likely to happen, and accordingly, greater caution should be exercised.

"If the foregoing conclusions be founded in truth, they would seem at once to expose the impropriety of the practice of resorting to the use of blisters on every trifling occasion, in the management of the diseases of children. There is an opinion prevalent—how it has originated I know not, that blisters are innocent remedies—if they do no good, they can no no harm. Now this is unquestionably a great error, and has been productive of vast mischief. Independently of the unnecessary suffering which they may occasion, they sometimes produce death by the manifest causes of ulceration and gangrene, while in others, they insidiously aggravate the disease they were intended to relieve."—(*New York Journal of Medicine*, July 1847.)

Ligature of Primitive Carotid Artery.—Dr. H. F. CAMPBELL, Demonstrator of Anatomy in the Medical College of Georgia, records, in the *Southern Medical and Surgical Journal*, August 1847, the following example of this operation.

"Richard, a free man of colour, aged 21 years, had from early childhood been known by his parents to have a very small tumour on the left side of his tongue, near the apex. This tumour had never given any trouble, remaining stationary in size till within a year or two previous to my being consulted. Attention was then called to it by its rapid enlargement, darker colour and strong pulsation, which continued to increase, till, in a short time, by its bulk and extreme sensibility, it materially interfered with mastication and enunciation. During the last two years, it had bled frequently, and of late, the hemorrhage had been so profuse as to threaten the patient's life. When I first saw him, he was pale, anæmic and emaciated to the proportions of a skeleton, as much from starvation as depletion, he not being able to take anything but cold gruel, on account of the enlarged condition and great sensibility of the tongue, as well as its liability to alarming bleeding, if impinged upon. The tongue itself was occupied, on the left side, to the median line, and even encroaching on the right of it, by a strongly pulsating, nodulated tumour of a dark red hue. This filled entirely the buccal cavity on that side, and pressed outward against the teeth, which, by absorption of its tissues from pressure, had caused a deep ulceration from which the bleeding occurred so frequently. Upon pressure, the tumour could be readily much reduced in size, by evacuating its vessels of blood, but this was an experiment of some hazard, on account of its active hemorrhagic tendency. The base of the tongue also participated in the enlargement, especially at its under surface, and from the continued irritation, the neighbouring glands of the mouth were much swollen and painful. The case had been considered cancer of the tongue—had been treated as such, and I was consulted for that disease, and indeed, the whole appearance of the patient strongly simulated that of the carcinomatous cachexia.

"The ulceration on the surface of the tumour was oblong in shape, and covered with dark coagula of the hemorrhages it gave out. The patient had been using astringent washes, to check the bleeding, and at present was under no other treatment. The day after my first visit to this man, I was called to him, in haste, to restrain the profuse hemorrhage from the ulcer, which had caused repeated syncope, and brought him to the extreme of debility. His condition was the following:—Hemorrhage very profuse, and only ceasing during the relaxation of deliquium, which supervened whenever he attempted to rise; pulse almost imperceptible at the wrist; patient of course much alarmed at his condition.

"On consultation with Drs. J. A. and P. E. Eve, ligation was determined upon; and as the most convenient and practicable, we chose the *Primitive Carotid* of

that side, both on account of its more easy access than the external carotid or lingual, and further, because pulsation in it was more appreciable in the exhausted condition of the patient. I performed the ordinary operation in the lower part of the anterior superior surgical triangle, making an incision of nearly three inches, which extended somewhat below the omo-hyoid muscle. The needle and ligature were passed without difficulty, the artery separated from its accompanying nerve and vein, and tied with a piece of saddler's silk. No blood was lost at the wound of the operation, and the *hemorrhage from the tumour ceased immediately*.

"Day after the operation. Pulse, though much improved, still feeble and accelerated on any trivial exertion; tumour on tongue somewhat smaller and quite dark; ulcer covered with clotted blood; little or no pain in the tongue. Prescribed as diet, cold gruel and cold chicken soup.

"Fourth day. Dressed the wound, which had healed by first intention, to within an inch of the ligature—a little healthy pus under the plasters; pulse much improved; tumour considerably flattened; in ulcer, no apparent change. Diet, as before.

"Fourteenth day. Wound in the neck entirely closed, with the exception of a small aperture that gave egress to the end of the ligature,—this was thrown off on the twenty-fifth day—no hemorrhage followed: the noose was entire on the thread. There had been no absorption of the ligature, but it had divided the remaining coat of the artery. A few hours after, I was called in haste to the patient, and found he had lost a small quantity of blood from the wound, though I think it most probably came from the very vascular granulations around the orifice made by the ligature. This healed rapidly without further accident or mishap. The tumour on the tongue had entirely disappeared—the tongue was of its natural colour and volume, except that where the deep ulceration had existed, there were a depression and whitish cicatrix—speech and mastication were performed with facility, and the restoration of the organ seemed complete. General health of the patient better than it had been for several years previous.

"For nearly a year after the operation, the patient continued free from any return of his disease. At the end of that time, he complained of some pain, and there was also slight tumefaction on the opposite side of the tongue. He did not reside in this state, and it was somewhat over three months before I again saw him, during which time (it is by no means strange to relate), he had been under the treatment of various *Charmers, Cancer Doctors and Conjurers*. When I did see him, his condition was fully as bad as when he first applied to me. The tumour now occupied both sides of the tongue; having passed from right to left, filled nearly the whole mouth, and had several small ulcerations upon its surface which bled frequently and profusely.

"I proposed the ligation of the other common carotid, to which the patient, but reluctantly, acceded. On consultation, the measure was abandoned as inexpedient. This miserable being died, a few months after, entirely worn out by successive hemorrhages, starvation and hectic irritation."

Surgical Treatment of Œdema of the Glottis.—Dr. GORDON BUCK stated to the New York Medical and Surgical Society, June 5th, last, that it had long ago occurred to him, that in cases of the œdema of the glottis, when suffocation seemed imminent, the patient might be relieved by incising the edges of the glottis and epiglottis. An opportunity having recently occurred, he had had recourse to the practice with decided benefit. The patient suffering under inflammation of the fauces, became affected with dyspnœa, attended with paroxysms of impending suffocation. On passing the finger into the fauces, the epiglottis could be felt enormously swollen and tense. The swelling of the glottis could likewise be distinguished. In the operation, a pair of curved, sharp-pointed scissors was employed, and afterwards, a curved, sharp-pointed bistoury, guarded to within a quarter of an inch of the point. The patient expectorated two or three spoonfuls of blood, mixed with the secretions of the fauces, and expressed himself decidedly relieved. Besides the operation, the patient was bled, leeches, inhaled aqueous vapour, &c. He recovered.

Dr. Clark said, that he thought the suggestion of Dr. B. a highly important one;

the œdematous swelling, in such cases, being principally situated on the posterior surface of the epiglottis, and on the upper and posterior part of the glottis. In this last situation it had a valvular action, rising up during expiration, but closing, and thus impending inspiration. Indeed, the fact that the difficulty occurred only during inspiration, was characteristic of the disease. Dr. C. thought the parts could be safely and easily reached, and that the operation afforded every promise of relief.—*Annalist*, July 15, 1837.

Animal Ligature.—Dr. W. T. WRAGG, in a paper on the use of animal ligatures in the *Southern Journal of Medicine and Pharmacy*, (Sept. 1847,) states that he has been in the habit of using these ligatures for upwards of ten years, and for several years he has used none but these. In the course of this period he has tied the arteries of the fingers, hand, forearm, arm, leg, and thigh,—and he has never seen any symptom result from which he could infer that the knot had not been removed by absorption. From the facts he has observed, he deduces the following inferences. 1st. That the deer sinew ligature, if properly applied, will effectually arrest hemorrhage from vessels even of large size. 2d. That they produce less inflammation of the living tissues with which they are placed in contact during the time they remain as foreign bodies, in these tissues, than other substances. 3d. That they are susceptible of being absorbed and carried away by the action of the living parts in the midst of which they are placed.

The substance Dr. Wragg uses is the deer sinew dried, stripped down and twisted, so as to form a small round thread of smooth and regular surface, inelastic and strong enough to withstand any degree of force that can be applied to it by the fingers in drawing the knot. The manner of preparing these threads Dr. W. considers to be a matter of much importance towards the success or failure of the operation, and he gives the following directions for this purpose: "First, the sinew should be well prepared: which is done by dissecting the hamstring tendon carefully out so as to obtain the greatest length of the fibre. The long tendons running down the leg will answer also, but they are not so easily stripped, and therefore do not give threads of as regular size. These tendons are prepared by long and careful drying, and should never be used till all moisture has disappeared from them. I prefer those which have been several years drying. To strip them down to the proper size, the process should commence at the middle part of the tendon and proceed towards the ends: by this means the entire length of the fibre is obtained, which can seldom be done if the commencement is made at either end. If any difficulty is experienced in tearing the fibres apart, the tendons should be beaten with a hammer, but not so violently as to destroy them. When reduced to a very small size the fibres must be moistened in water and twisted, either alone or two or more together, so as to prepare a thread of the desired size. This is then held in the fingers a few moments and stretched while drying, so as to retain the twist, which will remain permanent after the sinew becomes dry. Ligatures thus prepared should be kept on hand, for they become more and more adapted for their desired use by time. They should not be very large. The size cannot be exactly determined, for it must vary in some degree according to the artery on which it is to be placed. Thus in dissecting out tumours or performing deep operations, when small twigs are constantly springing and embarrassing the operation by filling the parts with blood, it becomes necessary to secure these in order to keep the scene of operations clear to the eye of the operator. Here a very small thread is best. And I would remark, in passing, that it is in these cases that the animal ligatures are eminently adapted to our purposes. The threads are cut close to the knot, and the progress of the operation is not impeded by the hanging ends, no matter how many it may have been deemed necessary to apply. In cases where an artery of some size is to be secured, as after an amputation, it may be better to enlarge the size of the thread a little, for the double purpose of enabling the surgeon to draw the knot with more force, and of making the hold of the thread upon the artery more secure by giving it more surface. I seldom, however, think it necessary to go much beyond the bigness of a packthread or a small sized twine."

I N D E X.

A.

Abortion, prevention of, 503
 Abscess of bladder, 536
 Acetate of morphia, coffee antidote to, 259
 Acid nitrate of mercury, 202
 Albuminous urine, caused by cantharides, 463
 Albuminuria in pregnant women, 505
 Alcohol, formation of in system, 259
 Alderson, on diseases of stomach and alimentary canal, 429
 Alum in pertussis, 218
 Amaurosis from encephaloid disease of the brain, 496
 Amenorrhœa, local treatment of, 217
 ———, chenopodium in, 218
 Ammonia, death from, 258
 Amputation above shoulder-joint, 360
 Amussat on effects of inhalations of ether, 261
 Aneurism, galvano-puncture in, 243
 ———, treatment of by compression, 194
 Angustura, 453
 Animal ligature, 544
 Aorta, rigidity of arch of, 224
 Aphonia, galvanism in, 468
 Aran, iodine and iodide of potassium in syphilis, 243
 Arlt, structure of conjunctiva, 497
 Arsenic, poisoning with in Cayenne, 258
 Arsenious acid, varieties of, 506
 Arteria innominata, statistics of ligature of, 13
 Arterialization, process of, 447
 Articular rheumatism cured by cold applications to affected joints, 263
 Ascites cured by iodine injection, 491
 Assamese, poisons of, 508
 Augusta, report of insane hospital at, 182

B.

Bambridge, ovarian dropsy, 231
 Bardsley, remedy for cramps of lower extremities, 223
 Barry, doubtful sex, 123
 Baudens, mode of bandaging wounds and stumps, 476
 Beck, blisters in young subjects, 538
 ———, excision of genital organs, 265
 Bednar, ischuria neonatorum, 472
 Bee, erysipelas phlegmonoides, 405
 Begbie, relations of rheumatism and chorea, 464

Bellingham, rigidity of arch of aorta, 225
 ——— scurvy, 455
 ——— treatment of aneurism by compression, 194
 Bennett, researches on cancer, 225
 Benzoate of ammonia in gout, 469
 Bifid vagina, 275
 Bile, colouring matter of, 450, 451
 Binoxide of mercury in skin diseases, 469
 Bird, electric moxa, 454
 Bishop, physiology of the human voice, 197
 Bismuth in diarrhœa, 219
 Bitter almonds, essential oil of, 516
 Bladder, lacerated wound of, 475
 ———, abscess of, 536
 Blandin, phlegmasia dolens on the male, 217
 Blandy, trial of Miss, 255
 Bliss, statistics of obstetric practice, 271
 Blisters in erysipelas, 489
 ——— in children, 538
 ———, dressing of, 451
 Blondlot, colouring matter of bile, 450
 Blood, character of in cancer, 201
 Bloomingdale Asylum, report, 436
 Boâ Vista fever, 415
 Bohm, strabismus and partial amaurosis from thickening of neurilemma of optic nerve, 248
 Boling, physical sign of pneumonia of the apex of the lungs, 125
 Boston Lunatic Asylum report, 185
 Bouillaud, albuminous urine caused by cantharides, 463
 Boyer, compression of epigastrium for hiccup, 455
 Bozzi, descent of spleen in pelvis, 245
 Brain, wound of, 473
 Bromide and iodide of potassium, comparative value of, 206
 Bronzing confectionary, 508
 Brown on cretans and idiots, 109
 Brulet, hypertrophy of septum nasi, 489
 Buck, œdema of glottis, 543
 Buckingham, partial occlusion of os uteri, 400
 Budd, cynanche laryngea, 221
 Bully, treacle in burns, 489
 Burd, ovarian tumour complicated with pregnancy removed, 236
 Burns, cold water for cure of, 488
 ———, treacle for cure of, 489
 Burrows, on tubercular pericarditis, 219
 Bushnan, operation for pseudarthrosis, 477
 Bussy, varieties of arsenious acid, 506

C.

- Campbell, ligature of primitive carotid, 542
 Canada Asylum report, 436
 Cancer, pathological researches on, 225
 Cantharides, albuminous urine caused by, 463
 Carcinomatous tumour of kidney, 266
 Carotid, ligature of common, 264
 Carotid arteries, statistics of ligature of, 13
 Carson's illustrations of medical botany, 177
 Cervix uteri, treatment of inflammatory induration of by deep cauterization with potassa fusa, 471
 Challeton, sulphuric ether in intermittent fever, 468
 Chevallier on ergot, 253
 ———, effects of vapour of phosphorus on workmen, 253
 Chevers, on cyanosis, 207
 Child, on indigestion, 181
 Children, fracture of skull in, 269
 Chorea, relations of rheumatism with, 464
 Ciliary processes, structure and functions of, 393
 Circulation, influence of gravity on, 472
 Citrate of magnesia, 452
 Clarke, strychnine in chronic bronchitis, 275
 Coffee, antidote to acetate of morphia, 259
 Coke and Woodburn case, 256
 Cold water in severe burns, 488
 Compression of epigastrium for the cure of hiccup, 455
 Conjunctiva, structure of, 497
 Constipation, Dick on, 465
 Cooper, trial of, 255
 Coote, mercurial action not a preventive of secondary syphilis, 246
 Coote and Taylor's experiments on effects of inhalation of ether, 513
 Copeman, ill effects of ether, 514
 Cord, prolapsus of, terminating favourably without interference, 252
 Cornea, opacities of, 247
 ———, tetanus from lacerated wound of, 475
 Coste, membrana decidua, 502
 Cramps of lower extremities, remedy for, 223
 Creatine, its office, 200
 Cretins and idiots, education of, 109
 Croup, tracheotomy in, 491
 Cumming, luminous appearance of the human eye, 248
 Cusparia, 453
 Cutaneous eruptions produced by medicines, 220
 Cyanosis, causes of, 207
 Cynanche laryngea, 221
 Cystitis, treatment of chronic, by injections of nitrate of silver, 481

D.

- Dalrymple, malignant diseases of eye, 495
 ———, amaurosis from encephaloid disease of brain, 496
 Datura sanguinea, 260
 Daureol, substitute for ether vapour, 207
 Davies, alum in pertussis, 218
 ———, ligature of external iliac artery, 245
 Delabarre, citrate of magnesia, 451

- Delivery through an extremely deformed pelvis, 497
 Devilliers, albuminuria in pregnant women, 505
 Diarrhœa, bismuth in, 219
 Diarsenite of quinine, 454
 Dickson, bifid vagina, 275
 Dick on constipation, 465
 ——— on cusparia, 453
 Dieffenbach's operation for pseudarthrosis, 477
 Dislocation, vertical, of patella, 479
 ———, partial, of humerus and femur, 481
 Dissection wounds, treatment of, 476
 Doubtful sex, 121
 Douglas' case, 255
 Dubois, spontaneous amputation, 253
 Ductus choledochus, fungous growth round orifice of, 466
 Dupuytren, partial dislocation of humerus and femur, 481

E.

- Egar, comparative value of bromide and iodide of potassium, 206
 Electric moxa, 454
 Electricity, its effects on the human organism, 468
 Encephaloid disease of brain, amaurosis from, 496
 Endemic gastro-follicular enteritis, 40
 Ergot, its effects on the parturient female and her offspring, 253
 Erysipelas phlegmonoides, 405
 ———, linear blisters in, 489
 Essential oil of bitter almonds, 510
 Ether, effects of inhalation of, 261
 ———, feigned diseases detected through inhalation of, 262
 ———, physiological effects of, 204
 ———, substitute for, 207
 ——— vapour enemata, 205
 ——— inhalation as a means of annulling pain, 512
 ———, rules for administering and precautions to be used, 512
 ———, physiological action of, 513
 ———, its employment in surgery, 514
 ———, its employment in midwifery, 518
 ———, present state of opinion regarding, 525
 ———, morbid appearances after death from, 516
 ———, opinions respecting use of, 526
 Expectoration of diabetic patients, sugar in, 212
 External iliac artery, ligature of, 245
 Eye, Lawrence's treatise on, 196
 ———, luminous appearance of, 248
 ———, malignant diseases of, 495
 ———, scrofulous inflammation of, 492
- F.
- Feigned diseases, 262
 Femoral aneurism, 535

Femur, partial dislocation of, 481
 Ferrers, Earl, trial of, 254
 Fosgate, case of Wm. Freeman, 409
 Foramen ovale, hernia strangulated in, 242
 Fracture of humerus through bicipital groove, 477
 Francis, detection of sugar in expectoration of diabetic patients, 212

G.

Galvanism in aphonia, 468
 Galvano-puncture in aneurism, 243
 Gecko, 254
 Genital organs, excision of, 265
 Gerdy, influence of gravity on circulation and local inflammation, 472
 Gibson, operations for femoral aneurism, 535
 Gilbert, amputation above shoulder-joint, 360
 Gintrac, wound of brain, 473
 Gloninger, carcinomatous tumour of kidney, 266
 Glover on scrofula, 167
 Gosselin, obliteration of spermatic ducts, 467
 Gout, benzoate of ammonia in, 469
 Gravity, influence of on circulation and local inflammation, 472
 Griffin, prevention of abortion, 503
 Griffith's Medical Botany, 163
 Grindley, essential oil of bitter almonds, 510
 Guersant, tracheotomy in croup, 491

H.

Hake, prolapsus ani, 487
 Hallowell, gastro-follicular enteritis, 40
 ———, cases illustrating the natural history of tubercular diseases, 440
 Hamilton, fracture of skull in, 269
 Harden, isopathia, 339
 Hargrave, treatment of dissection wounds, 476
 Harris, doubtful sex, 121
 Hartford Retreat for the Insane, report, 186
 Hartshorne on hydropathy, 444
 Hays' operation for symblepharon, 263
 Headache, varieties of, 459
 Heller, characters of blood in cancer, 201
 Hemorrhage from umbilical vessels, 504
 Hernia, strangulated in foramen ovale, diagnosis of, 262
 ———, radical cure of, 402
 Hertzfeld, some appearances in purulent poisoning of the blood, 214
 Hewett, wound of rectum and bladder, 475
 Heylen, obliquity and increased length of septum nasi, 490
 Hiccup, compression of epigastrium for cure of, 455
 Houlton, chenopodium in amenorrhœa, 218
 Humerus, partial dislocations of, 481
 Hydrated peroxide of iron, changes of when kept in water, 259
 Hydrotherapy, 75

I.

Iberis amara, 453

Ibreisle, binocide of mercury in skin diseases, 469
 Idiots, education of, 109, 442
 Indiana Hospital for Insane, report, 193
 Indigestion, Child on, 181
 Induration, inflammations of cervix uteri, treated by deep cauterization, 471
 Infanticide in Madagascar, 261
 ———, 507
 Inflammation, opium in, 461
 Insane hospital reports, 182, 436
 Insoluble substances, entrance of from intestines into blood-vessels, 448
 Intermittent fever, sulphuric ether in, 468
 Iodine, tincture of in intermittent fever, 223
 ———, injection into peritoneal cavity, 491
 Ischuria neonatorum, 472
 Isopathia, 339

J.

Jacob, scrofulous ophthalmia, 492
 ———'s essays, 445
 Jansen, pathological anatomy of perichondritis laryngea, 213
 Jaundice, obstruction of orifice of ductus choledochus, 466
 Jobert's operation for vesico-vaginal fistula, 484

K.

Keiller, spontaneous evolution, 503
 ———, fatal hemorrhage from umbilicus, 504
 Kelley on yellow fever, 373
 Kentucky Lunatic Asylum, 192
 Kidney, subacute inflammation, 463
 Kingdon, diarsenite of quinine, 454
 Kneeland on hydrotherapy, 75
 Kusten, cold water in severe burns, 488

L.

Larynx, acute œdematous inflammation of, 221
 Lawrence, treatise on the eye, 196
 Ledoyen's disinfecting fluid, 511
 Legrand, local treatment of amenorrhœa, 217
 Leriche, ascites cured by iodine injection into peritoneal cavity, 491
 Letheby, poisoning by turpeth mineral, 508
 Liebig, creatine, 200
 ———, new test for prussic acid, 506
 Ligature of carotid arteries and arteria innominata, 13
 ——— of external iliac artery, 245, 535
 ——— of common carotid, 264
 ——— of primitive carotid artery, 562
 Littrow, effects of sudden changes of temperature, 220
 Local inflammation, influence of gravity on, 472
 Luminous appearance of human eye, 268

M.

Maclagan, dressing of blisters, 452

Madagascar, infanticide in, 261
 Massachusetts State Lunatic Asylum report, 185

———, births, deaths, marriages, &c., in, 439

McCoy, inversion of uterus successfully treated, 275

McDonnell, chronic cystitis, 481

McLean Asylum for the Insane, report, 184

McWilliams, report on the fever of Boâ Vista, 415

Medical Botany, Griffith's, 163

———, Carson's, illustrations of, 177

Mediastinitis, 223

Membrana decidua, formation and structure of, 199

———, 502

Mercurial sore, diagnosis of, 245

——— action not a preventive of secondary symptoms, 246

Mercury, acid nitrate of, 202

——— detected in pus of bubo, 451

Metcalf, statistics in midwifery, 295

Metscherlich, formation of alcohol in system, 259

Mettauer, vesico-vaginal fistula, 117

Michel, early human ovum, 330

———, structure and functions of ciliary processes, 393

Mojon, death from impermeable covering of skin, 447

Monterey, medical account of battle of, 266

Mount Hope Institute report, 190

Mucous membrane of stomach, softening of, 259

N.

National Medical Convention, proceedings of, 196

Nervous system, researches on, 449

New Hampshire Asylum report, 436

New York State Lunatic Asylum report, 187

Nicotine, 253

Nitrate of silver, treatment of cystitis by injections of, 481

Norris, statistics of ligature of carotid arteries and arteria innominata, 13

Nott, health and longevity of the southern seaports, 178

———, radical cure of hernia, 402

O.

Obstetrics, statistics of, 271, 295

Edema of glottis, 543

Oesterlen, entrance of insoluble substances into the blood, 448

Ohio Lunatic Asylum report, 191

Opium in inflammation, 461

Orr, tracheotomy, 239

Osteo-sarcoma of lower jaw, 370

Os uteri, partial occlusion of, 400

Ovarian dropsy, 231

——— tumour complicated with pregnancy, removed, 236

———, extirpation of, 483

Ovum, very early, 330

P.

Palfrey's report of births, &c., in Massachusetts, 439

Pallas, effects of electricity on human organism, 468

Pardee's cases of scarlatina, 127

Patella, vertical dislocation of, 479

Payen, vertical dislocation of patella, 479

Pennock, frequency of the pulse and respiration in the aged, 68

Pennsylvania Hospital for Insane, report, 189

Perichondritis laryngea, pathological anatomy of, 213

Peritoneal cavity, injection of iodine in, 491

Pertussis, alum in, 218

Peruvian bark, 203

Pfaff, solium temulentum, 258

Pfeuffer on mediastinitis, 223

Philadelphia College of Physicians, transactions of, 440

Phlegmasia dolens in the male, 217

Phosphorus, effects of vapour of on workmen, 253

Physiology, Reese's analysis of, 193

Pickford, injurious effects of ether, 515

Piorry, blisters in erysipelas, 489

Pirogoff, ether vapour enemata, 205

Pneumonia of apex of lungs, physical sign of, 125

Pneumogastric nerves, functions of, 198

Poisoned weapons of Peruvian Indians, 260

Poisoning, 508

Polli, colouring matter of bile, 451

Pollock, tetanus from lacerated wound of cornea, 475

Porter, diagnosis of mercurial sore, 245

Prolapsus ani, new treatment of, 487

Prussic acid, new test for, 506

Pseudarthrosis, Dieffenbach's operation for, 477

Pulse and respiration, frequency of in the aged, 68

Purulent infection, 491

Pus of bubo, detection of mercury in, 451

Pym's letter on fever of Boâ Vista, 415

Q.

Quinine, its influence on volume of spleen in ague, 470

R.

Rainey, anatomy and physiology of the vascular fringes in joints and sheaths of tendons, 198

Ranking, opium in inflammation, 461

———, ether in tetanus, 518

Rayer, bismuth in diarrhœa, 219

Rectum, lacerated wound of, 475

Red corpuscles of blood function, 447

Red pepper, 202

Rees, function of red corpuscles of blood, 447

Reese, analysis of physiology, 193

Regnault, albuminuria, 505

Rhatany, 203

Rheumatism, relations with chorea, 464
 —, treacle as a local remedy in, 470
 Robert, salivary calculus, 490
 Robin, researches on nervous system, 449
 Roeser, diagnosis of hernia strangulated in foramen ovale, 242
 Rognetta, use of starch bandages, 241
 Rostan, compression of epigastrium for cure of hiccup, 455
 Ruschenberger, acute articular rheumatism cured by cold applications to joints, 263

S.

Salivary calculus, 490
 Sandras, functions of pneumogastric nerves, 198
 Sargent, typhus fever, 529
 Scarletina, cases of, 127
 Schloesing, nicotine, 253
 Scrofula, Glover on, 167
 Scrofulous ophthalmia, 492
 Scurvy, 455
 Sea moss, as a bandage for fractures, 204
 Sedillot, purulent infection, 491
 Seguin, tincture of iodine in intermittent fever, 223
 Selberg, poisoning in Java, the gecko, 254
 Septum nasi, hypertrophy of, 489
 —, obliquity and increased length of, 490
 Seymour, benzoate of ammonia in gout, 469
 Shipman, ligature of common carotid for removal of the parotid gland, 264
 Shoulder-joint, amputation above, 360
 Simon, subacute inflammation of kidney, 463
 Simpson, deep cauterizations for cure of inflammatory induration of cervix uteri, 471
 —, delivery through an extremely deformed pelvis, 497
 —, hemorrhage from umbilical vessels, 504
 —, fungus from umbilicus in infants, 504
 —, use of ether in obstetric practice, 519, 520
 Simms, osteo-sarcoma of lower jaw, 370
 Singultus, compression of epigastrium for cure of, 455
 Skin diseases, binocide of mercury in, 469
 —, death from impermeable covering of, 447
 Skull, fracture of in children, 269
 Smith, fracture of upper extremity of humerus traversing the bicipital groove, 477
 —, ether in midwifery, 525
 Softening of mucous membrane of stomach, 259
 Solium temulentum, 258
 Spermatic ducts, obliteration of, 467
 Spleen, descent of in pelvis, 245
 —, influence of quinine on volume of, 470
 Spontaneous amputation, 253
 — evolution, 503
 Starch bandages, use of, 241
 Statistics, midwifery, 271, 295

Statistics of ligature of carotid arteries and arteria innominata, 13
 Stokes, jaundice—fungous growth round orifice of ductus choledochus, 466
 Stomach, Alderson on diseases of, 429
 Strabismus, causes of, 248
 —, and partial amaurosis, 248
 Strychnine in chronic bronchitis, 275
 Stumps, new mode of bandaging, 476
 Sublingual tumour, 490
 Sugar, detection of in expectoration of diabetic patients, 212
 Sulphuric ether in intermittent fever, 468
 Summer complaint of children, 40
 Sylvester, on iberis amara, 453
 Symblepharon, operation for, 246, 263
 Syphilis, iodine and iodide of potassium in, 243

T.

Temperature, effects of sudden changes of, 220
 Tetanus from lacerated wound of cornea, 475
 —, ether in, 518
 Thyroid gland, death from hypertrophy of, 471
 Tongue, semeiology of, 460
 Tracheotomy in croup, 491
 —, 239
 Treacle as a local remedy in rheumatism, 470
 — in burns, 489
 Trials, remarkable English, 254
 Tschudi, datura sanguinea, 260
 —, Peruvian bark, 203
 —, poisoned weapons of the Peruvian Indians, 260
 —, red pepper, 202
 —, rhatany, 203
 —, sea moss as a bandage for fractures, 204
 Tubercular pericarditis, 219
 — diseases, natural history of, 440
 Turnbull, abscess of bladder, 536
 Turpeth mineral, poisoning with, 508
 Typhus fever, 529

U.

Umbilical vessels, hemorrhage from, 504
 Umbilicus, fungus from, 504
 Unborn child recognized by the law, 257
 Uterus, inversion of, 275

V.

Vagina, bifid, 275
 Valerianate of zinc, 202
 Valleix on influence of quinine on volume of spleen, 470
 Vascular fringes in joints and the sheaths of tendons, 198
 Vesico-vaginal fistula, 484
 Vermont Asylum for the Insane, report, 183
 Ville, influence of ether on inhalation, 514
 Vines, treacle a local remedy in rheumatism, 470

Virginia Western Asylum report, 191
Voice, physiology of the, 197

W.

Water, and its true relations to medicine, 466
Watson's Practice of Physic, 445
Wharton's duct, dilatation of, 490
Wilde, symblepharon, 246
——, opacities of cornea, 267
Wittstein, changes effected in hydrated peroxide of iron when kept in water, 259
Wood's Practice of Medicine, review of, 133
Woodhouse, prolapsus of cord terminating favourably without instrumental interference, 252

Wounds, Bauden's mode of bandaging, 476
Woyeikowski, extirpation of ovarian tumour, 483
Wragg, animal ligature, 544
Wright, varieties of headache, 459
——, semeiology of tongue, 460

Y.

Yellow fever, 373

Z.

Zinc, valerianate of, 202

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